

DAEWOO

Service Manual

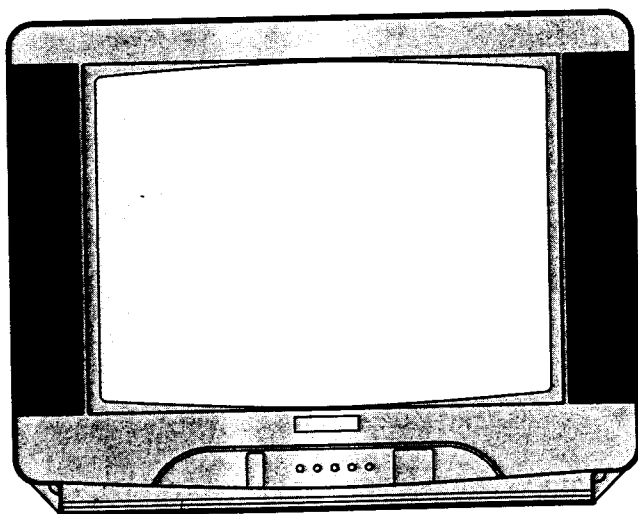
Colour Television

CHASSIS : CP-365
PAL/SECAM SYSTEM
NTSC-3.58/4.43(AV) : TK ONLY

MODEL : DTT-21C1/21B1
2195/2172/2166
DTT-20C1/20B1
2075/2072/2066

UK : T204/T514

GOODMANS 20B1



DAEWOO ELECTRONICS CO., LTD.

MC-Service

| INCH | 21" | 20" |
|--------|--|---|
| MODEL | DTT-21C1 xxF 21B1 xxF 2195 xxF 2172 xx-/xxF 2166 xx- | DTT -20C1 xxP/xxF -20B1 xxP/xxF -2075 xxP/xxF -2072 xx-/xxP/xxF -2066 xx- |
| REMARK | F : PHILIPS CRT - : ORION CRT | P : POLKOLOR CRT F : SAMSUNG WF CRT - : ORION CRT |

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■ SPECIFICATIONS

| | |
|------------------------|--|
| TV Standard | : PAL-B/G (FTZ) (Model: DTT-XXXXTF) PAL/SECAM-B/G, D/K (Model: DTT-XXXXTK) NTSC-3.58/4.43(AV) PAL/SECAM-B/G, D/K, SECAM-L/L' (Model: DTT-XXXXVA) PAL/B/G (Model: DTT-XXXXTS) PAL-I (Model: DTT-XXXXTU) |
| Mains Voltage | : 220-240V AC, 50Hz 110-260V AC, 50/60Hz (OPTION) |
| Power Consumption | : 90W approx (20 inch) 95W approx (21 inch) |
| Sound Output Power | : 2W + 2W (60% MOD) |
| Speaker | : 5W 8 ohms x2 |
| Antenna Impedance | : 75 ohm unbalanced 300 ohm balanced with supplied balun |
| Tuning System | : Voltage Synthesizer Tuning System |
| Number of Program | : 100 Programmes |
| Reception Channel | : VHF: CH 2 to 12 UHF: CH 21 to 69 CATV: CH S1', S2', S3' and S1 to S20 HYPER: CH S21 to S41 |
| Remote Control Unit | : Type R-22 or R-23 or R-28 (Requires two 1.5V penlight batteries type with AAA size) |
| Screen Size (Diagonal) | : 20": 48cm (Diagonal) 21": 51cm (Diagonal) |
| Teletext System | : 8 page memory FASTEXT (TOP/FLOF or LIST) |
| Aux. Terminal | : 21pin Euro-SCARTx2, Headphone(OPTION), S-VHS(OPTION), RCA JACK(OPTION) |
| Stereo System | : Two-carrier stereo, NICAM stereo (option) |
| Weight | : 20": 22.5Kg approx 21": 25.0Kg approx |
| Indication | : On SCREEN DISPLAY - Program No.(00-99) - SLEEP (15-120) - MUTE - AV - NORMAL (NORMAL I, NORMAL II, FAVOURITE) - MAIN MENU (CONTRAST, BRIGHT, COLOUR, SHARPNESS, TINT (NTSC OPTION)) - TIMER MENU (CLOCK, ON TIMER, OFF TIMER) - PRESET MENU (FAS, AUTO SEARCH, F/T, RENUMBER) - AUTO SEARCH MENU (SKIP, SEARCH, STATION NAME) |

■ SAFETY INSTRUCTIONS

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" BELOW.

■ X-RAY RADIATION PRECAUTION

1. Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not exceed the specified limit. The nominal value of the high voltage of this receiver is 25.5kv (21": 26.5kv) at max beam current. The high voltage must not, under any circumstances, exceed 27.5kv (21": 29.5kv). Each time a receiver requires servicing, the high voltage should be checked following the HIGH VOLTAGE CHECK procedure on page 31 of this

manual. It is recommended the reading of the high voltage be recorded as a part of the service records. It is important to use an accurate and reliable high voltage metre.

2. The only source of X-RAY RADIATION in this TV receiver is the picture tube. For continuous X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.

■ SAFETY PRECAUTION

1. Potentials of high voltage are present when this receiver is operating. Operation of the receiver outside the cabinet or with the back board removed involves a shock hazard from the receiver.

1) Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high-voltage equipment.

2) Always discharge the picture tube to avoid the shock hazard before removing the anode cap.

3) Discharge the high potential of the picture tube before handling the tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled.

2. If any Fuse in this TV receiver is blown, replace it with the FUSE specified in the Replacement Parts List.

3. When replacing a high wattage resistor (oxide metal film resistor) in circuit board, keep the resistor 10mm away from circuit board.

4. Keep wires away from high voltage of high temperature components.

5. This receiver must operate under AC220-240 volts, 50Hz. (AC 110-260 volts, 50/60Hz: OPTION) NEVER connect to DC supply or any other power or frequency.

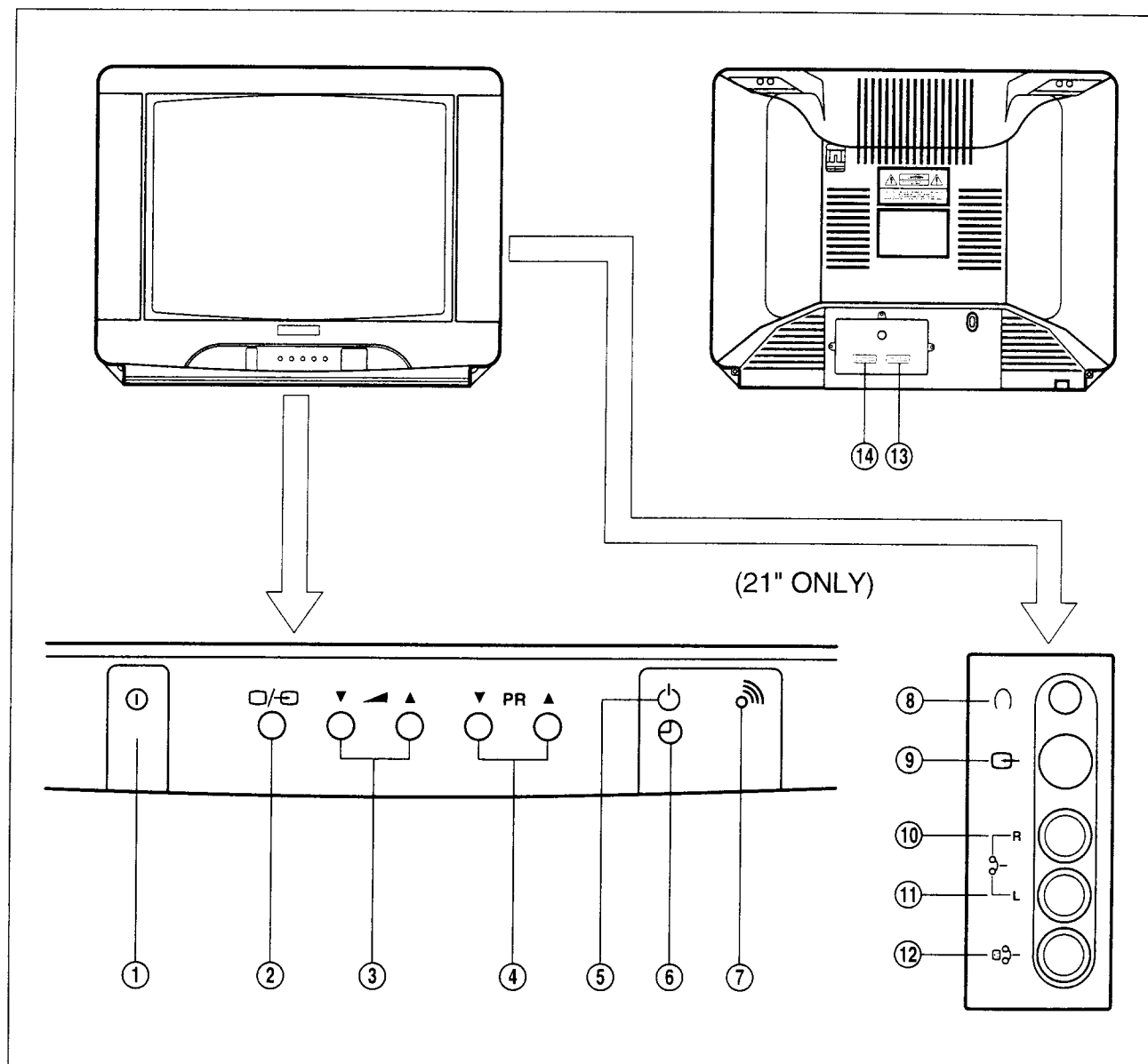
■ PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the X-RAY RADIATION protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual

and its supplements, electrical components having such features are identified by designated symbol on the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create X-RAY RADIATION.

■ LOCATION OF CONTROLS

■ FRONT VIEW/CONTROL BUTTONS



1) MAIN POWER SWITCH

2) TV/AV SELECTION BUTTON

3) VOLUME DOWN/UP BUTTON

4) PROGRAMME DOWN/UP BUTTON

5) STAND-BY INDICATOR

6) ON TIMER INDICATOR

7) INFRARED REMOTE SENSOR

8) HEADPHONE JACK

9) S-VHS JACK

10) RIGHT AUDIO INPUT RCA JACK

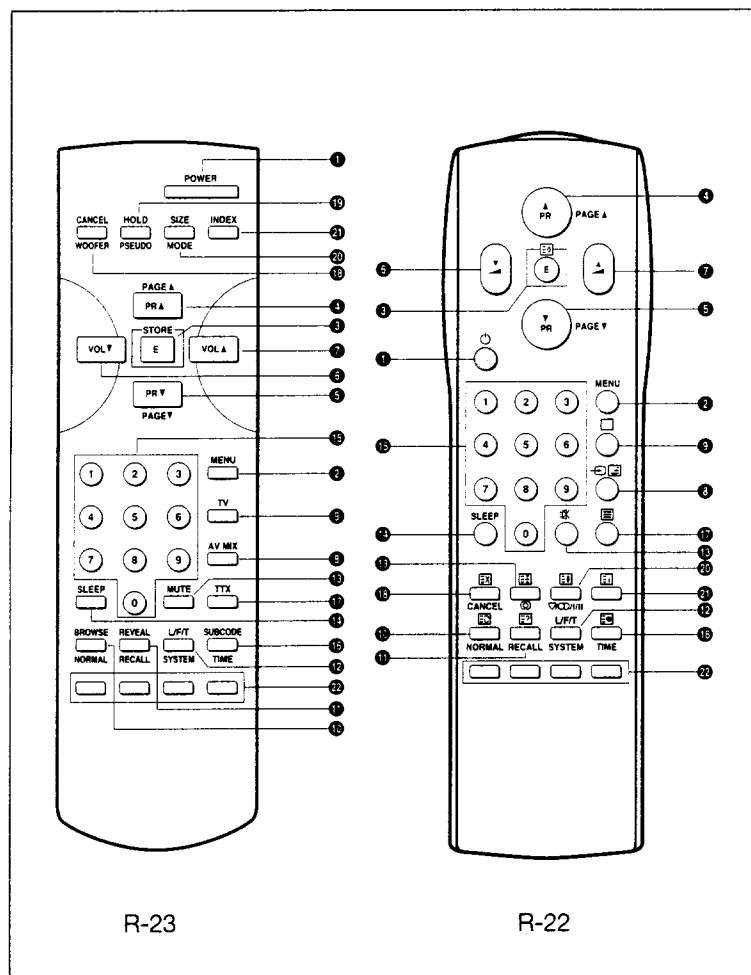
11) LEFT AUDIO INPUT RCA JACK

12) VIDEO INPUT RCA JACK

13) 21-PIN EURO-SCART 1 JACK (RGB, AV1)

14) 21-PIN EURO-SCART 2 JACK (S-VHS INPUT, AV2)

■ REMOTE CONTROL UNIT



| | ◆ TV USE | ◆ TEXT USE (OPTION) |
|----|--------------------|---------------------|
| 1 | POWER p6 | — |
| 2 | MENU p7 | — |
| 3 | ENTER p8 | STORE P19 |
| 4 | UP (PR UP) p6 | PAGE UP P17 |
| 5 | DOWN (PR DOWN) p6 | PAGE DOWN P17 |
| 6 | LEFT (VOL DOWN) p6 | — |
| 7 | RIGHT (VOL UP) p6 | — |
| 8 | AV p15 | MIX P18 |
| 9 | TV p15 | — |
| 10 | NORMAL p14 | BROWSE P18 |
| 11 | RECALL p14 | REVEAL P18 |
| 12 | — | L/F/T P19 |
| 13 | MUTE p16 | — |
| 14 | SLEEP p13 | — |
| 15 | PR SELECTOR 0-9 p6 | PAGE SELECT 0-9 P17 |
| 16 | TIME p15 | SUBCODE P19 |
| 17 | — | TTX P17 |
| 18 | — | CANCEL P18 |
| 19 | PSEUDO p16 | HOLD P18 |
| 20 | MODE p16 | SIZE P18 |
| 21 | — | INDEX P18 |
| 22 | — | RGYC P19 |

■ OPERATION OF CONTROLS

POWER ON/OFF

1. Before plugging in your set, confirm that your power supply is suitable.
Your new TV is designed to operate on AC 220-240V 50Hz.
Do not operate on DC power supplies or any other voltage.
2. Plug in to the mains outlet.
3. Switch the TV on by pressing the Main Power Switch ①.
The Stand-By Indicator ⑤ will illuminate.
The TV will then be in Stand-By mode.
4. Next press either: -
PROGRAMME UP or DOWN button ④ on the front of the TV,
The POWER button ① or one of the PR SELECTOR ⑮ buttons 1-9 on the Remote Control.
The Stand-By indicator will turn off and a picture appear on the screen. A programme number and space for station name (not yet recorded so indicated as ----) will appear on the upper left of the screen in green and disappear after five seconds.
5. Press the POWER button ① on the Remote Control to return the TV to Stand-By mode.

PR SELECTOR 0~9 ⑮

In normal TV mode, these buttons are used for direct programme selection and can also be used for turning on the TV.

DOWN AND UP (PR ▲/▼) ④ ⑤

In normal TV Mode, these buttons are sequential programme selection buttons, but a programme designated by you as SKIP ON cannot be selected. For details about the SKIP ON/OFF function see page 10.

LEFT & RIGHT (◀▲/▼▶) ⑥ ⑦

Pressing the RIGHT ▲ button increases the sound volume and pressing the LEFT ▼ button decreases it.

When these buttons are pressed a volume indication bar appears at the bottom of the TV screen in green colour.

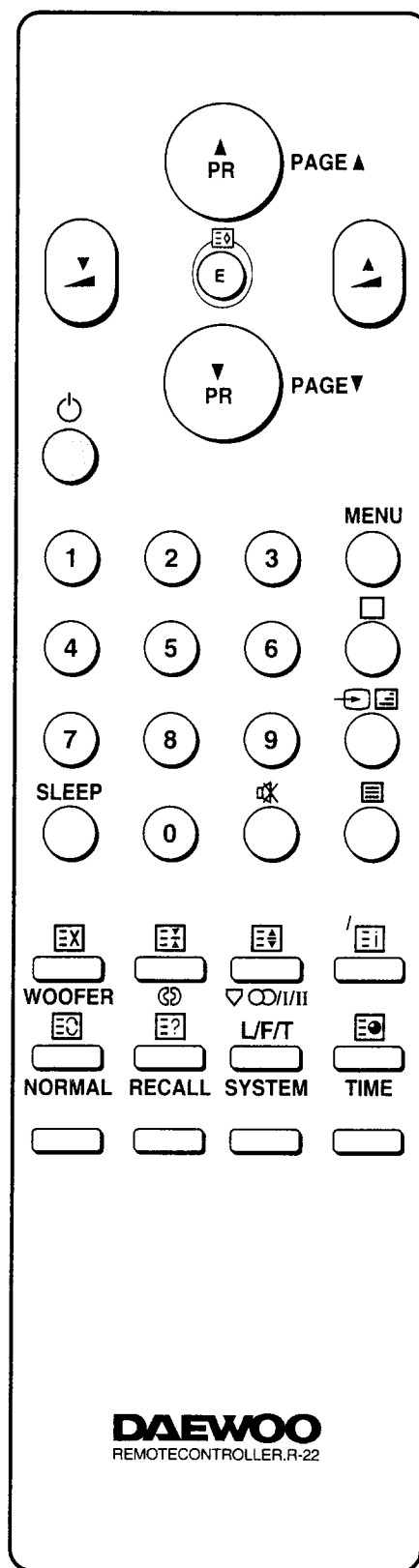
REMOTE CONTROL

The Remote Control Unit operates with two 1.5V AAA(penlight) batteries which are supplied from the factory.

To renew the batteries turn the unit upside down, press down on the battery compartment grip and slide the cover in the direction of the arrow.

When installing the batteries make sure that the polarity matches with the (+) and (-) marks inside of the battery compartment.

The Remote Control is designed to operate within a distance of about 7 metres. If a malfunction occurs within this effective operating range the batteries may be weak and require replacement. Do not mix old and new batteries.



MENU ②

Your TV set has an up-to-date feature that you need to learn how to use an early stage.

It's called MENU ② and it is a way of programming your TV to operate efficiently without the constant need for adjustment of controls.

Those functions that are not used very frequently are only accessible via MENU and MENU itself is operated by just six buttons:

MENU ② ENTER ③

DOWN ⑤ UP ④

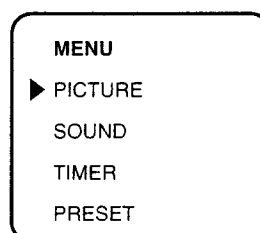
LEFT ⑥ RIGHT ⑦

plus the PR SELECTOR buttons 0-9. ⑮

The main MENU is activated by pressing the MENU button and appears on the screen as shown.

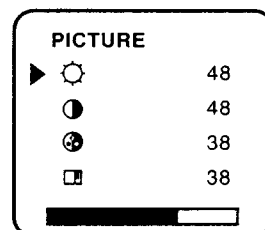
The cursor(the arrow head on the left of the On Screen Display) is moved by pressing the DOWN or UP buttons.

A Sub-Menu is entered by placing the cursor against the topic required and pressing ENTER.



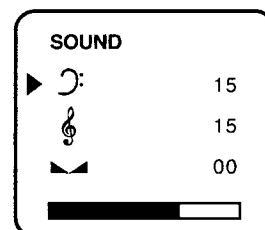
1. PICTURE

The Sub-Menu for PICTURE is shown on the right. This allows you to set the BRIGHTNESS(☀), COLOUR(⊕), CONTRAST(●) and SHARPNESS(□) for your TV picture.



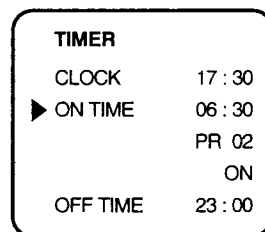
2. SOUND

The Sub-Menu for SOUND allow you to set the BASS, TREBLE, and BALANCE for your TV sound.



3. TIMER

The Sub-Menu for TIMER allows you to set the TV clock, and pre-programme the TV to turn on and off when required.

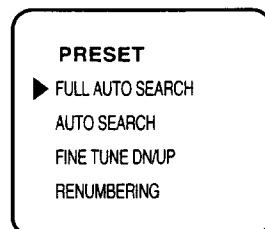


4. PRESET

Finally, the Sub-Menu for PRESET allows you to preset all your TV stations as required, to fine tune the programme and to select the channels.

If you wish to come out of any of the Sub-Menus you simply press the MENU button and you will return to the higher level in the menu tree.

If you press MENU again while you are in the main Menu, Menu mode will be cancelled. Pressing the TV button can also be used to quit the MENU mode at any level.

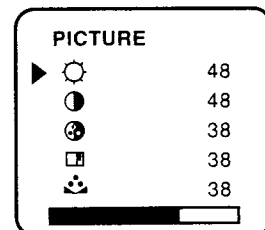


Note that when Teletext is being operated the only MENU selectable is PICTURE and this menu is activated when the MENU button is pressed in the Teletext mode. The MENU mode is cancelled by pressing the MENU button again.

PICTURE

Select the required function by moving the cursor with the DOWN **5** or **4** UP button.

Use the LEFT **6** or RIGHT **7** button to adjust the level of each function-the level being indicated at the bottom of the On Screen Display.



1. BRIGHTNESS (☀)

Adjust for natural brightness if your TV picture appears to be too bright or too dark.

2. COLOUR (🎨)

Adjust your TV picture for the strength of colour preferred.

3. CONTRAST (◐)

Use this to obtain a satisfactory range of tones between black and white. Remember that a bright room will need a higher contrast setting than a dark room.

4. SHARPNESS (🔍)

This sharpens the image of the picture. It is the most usable when watching programmes from an external source such as a VCR.

5. TINT (🎭) -[OPTION : NTSC]

TINT adjustment changes the tone of colour.

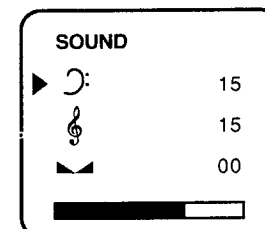
This OSD sign only appears when the 3.58NTSC signal is input in AV MODE.

Note that COLOUR and SHARPNESS adjustment is not possible for Teletext or when using the RGB input of the SCART socket.

SOUND

Select the required function by moving the cursor with the DOWN **5** or UP **4** button.

Use the LEFT **6** or RIGHT **7** button to adjust the level of each function-the level being indicated at the bottom of the On Screen Display.



1. BASS (🎵)

Used to increase or decrease the bass of sound.

2. TREBLE (🎵)

Used to increase or decrease the treble of sound

3. BALANCE (⚖)

Adjust the balance for the best stereo effect for your room conditions.

TIMER

1. CLOCK

Place the cursor at CLOCK using the UP **4** or DOWN **5** button and press ENTER **1**.

The hour will start blinking.

Set the hour by using the LEFT **6** or RIGHT **7** button.

The minutes will start blinking

Move the cursor to MINUTES by pressing the DOWN **5** button and set the minutes by using the LEFT **6** or RIGHT **7** button.

Then you can either press the DOWN **5** button again, in which case the cursor will stay at CLOCK, or press the UP **4** button, in which case the time will start blinking again. Then you can then make a final adjustment to the time, if you wish, press the UP **4** button again to move to the initial CLOCK mode.

| TIMER | |
|----------|---------|
| ▶ CLOCK | 17 : 30 |
| ON TIME | 06 : 30 |
| | PR 02 |
| | ON |
| OFF TIME | 23 : 00 |

2. ON TIME

Place the cursor at ON TIME and set on time in a similar way as in CLOCK.

| TIMER | |
|-----------|---------|
| CLOCK | 17 : 30 |
| ▶ ON TIME | 06 : 30 |
| | PR 02 |
| | ON |
| OFF TIME | 23 : 00 |

3. ON TIME PR. No.

Place the cursor at PR. No. and select the programme number by using the PR SELECTOR **15** buttons 0-9 or the LEFT **6** or RIGHT **7** button.

When a valid programme number is input the TV will automatically switch on to this programme.

| TIMER | |
|----------|---------|
| CLOCK | 17 : 30 |
| ON TIME | 06 : 30 |
| ▶ | PR 02 |
| | ON |
| OFF TIME | 23 : 00 |

4. ON TIME ON/OFF

Place the cursor at ON TIME ON/OFF and toggle from ON to OFF by using the LEFT **6** or RIGHT **7** button. This facility is only available when CLOCK and TIME have been activated.

When ON TIME is ON, then the ON TIME INDICATOR **6** on the front of the TV will illuminate to show that the ON TIME function is enabled.

| TIMER | |
|----------|---------|
| CLOCK | 17 : 30 |
| ON TIME | 06 : 30 |
| | PR 02 |
| ▶ | ON |
| OFF TIME | 23 : 00 |

5. OFF TIME

Place the cursor at OFF TIME and press ENTER **1** button to set OFF TIME as in the CLOCK mode above.

| TIMER | |
|------------|---------|
| CLOCK | 17 : 30 |
| ON TIME | 06 : 30 |
| | PR 02 |
| | ON |
| ▶ OFF TIME | 23 : 00 |

Note that if the OFF TIME value is --:-- then the OFF TIME is disabled. Any other entry will cause OFF TIME to operate.

PRESET

The Preset Menu is used to operate the tuning function and tune your TV channels. It cannot be selected whilst in either Teletext or AV mode.

1. FULL AUTO SEARCH

In the Preset Menu place the cursor on FULL AUTO SEARCH by using the UP or DOWN button. Press ENTER and the TV will automatically tune itself to all available channels from 0-99, from

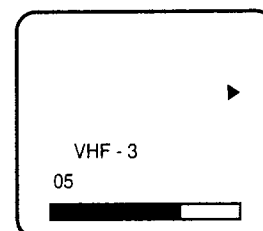
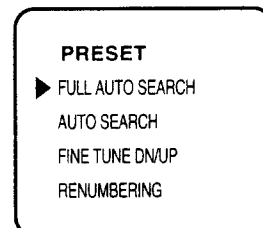
VHF-1(SECAM-L) → VHF-3(SECAM-L) → UHF(SCAM-L) → VHF-1
UHF-3 ← VHF-3 ←

In case of SECAM-L mode, the letter "F" is displayed beside band name.

Where it detects a signal it will store the location under a programme number: starting with "1" and automatically increasing the number as it searches for the next station.

When all 100 programmes have been stored-or the searching of all available stations has been completed-the TV will return to the Preset Menu again.

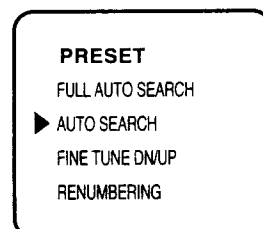
If you wish to cancel Full Auto Search use MENU ②, TV ③ or Power ① button.



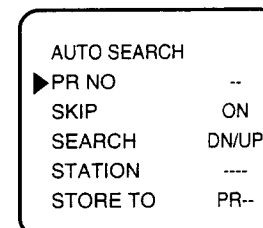
2. AUTO SEARCH

In the Preset Menu place the cursor on AUTO SEARCH by using the UP ④ or DOWN ⑤ button. Press ENTER ③ and the Auto Search Menu is displayed as shown. If you wish to return to the Preset Menu press MENU.

If you'd like to get SECAM-L broadcasting, select SECAM-L mode by pressing SYSTEM button. You can see the letter "F" beside PR No.

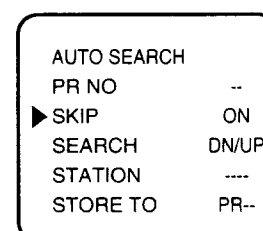


2.1. The Programme Number is changed by using the LEFT ⑥ or RIGHT ⑦ button or the PR SELECTOR ⑩ buttons 0-9. Select a programme number that you will recognize: eg. 01 for BBC1:02 for BBC2:03 for ITV1:04 Channel 4 etc.



2.2. Skip On/Off is changed from ON to OFF by toggling the LEFT ⑥ or RIGHT ⑦ button and whenever it is toggled it is memorized immediately. A programme marked with SKIP is skipped when using the Programme DOWN ⑤ or UP ④ button. Use the SKIP facility to skip the poorer reception channels that your TV may tune automatically.

A skipped PR No. selected by Programme DOWN ⑤ or UP ④ will be displayed in red on the screen.



2.3. Search Down/Up is operated by using the LEFT **6** button for Search Down and the RIGHT **7** button for Search Up.

When a station is found it changes to Auto Search menu. When the tuning reaches the top of a band, it will be changed to the next band. The band is switched as follows:

VHF 1 ↔ VHF 3 ↔ UHF ↔ VHF 1

If you press this button and keep it pressing for 2 seconds, the band will be changed

If you set mode SECAM-L, the letter "F" is displayed beside band name.

| | |
|-------------|-------|
| AUTO SEARCH | |
| PR NO | -- |
| SKIP | ON |
| ▶ SEARCH | DN/UP |
| STATION | ---- |
| STORE TO | PR-- |

| | |
|--|----|
| VHF - 3 | |
| 05 | ▶▶ |
| <div style="border: 1px solid black; width: 100px; height: 10px; position: relative;"> </div> | |

2.4. Station is used to record the station name: place the cursor on STATION and press ENTER **8**

The first character from the left of the four available characters will start blinking.

| | |
|-------------|-------|
| AUTO SEARCH | |
| PR NO | -- |
| SKIP | ON |
| SEARCH | DN/UP |
| ▶ STATION | ---- |
| STORE TO | PR-- |

If you press the DOWN **5** button, the blinking is moved one space to the right: the UP **4** button moves the blinking one space to the left. Press the LEFT **6** or RIGHT **7** button and the actual character displayed is changed by one digit or letter sequentially in each direction. In this way you can make sure that PR No.01 is called BBC1: and PR No. 02 is called BBC2 etc.

If you make a mistake in the station name you can revert to the initial blank mode (----) by pressing RECALL. **11**

| | |
|-------------|-------|
| AUTO SEARCH | |
| PR NO | -- |
| SKIP | ON |
| SEARCH | DN/UP |
| ▶ STATION | ---- |
| STORE TO | PR-- |

2.5. Store to PR No. is used to memorize all the above functions which have been operated in Auto Search mode. Place the cursor at STORE TO PR.NO. and select the PR. No. by pressing LEFT **6** or RIGHT **7** button or one of the PR SELECTOR **15** buttons 0-9.

Press the ENTER **8** button after selecting the PR. No. required and it will be memorized. Note that while this is being carried out the colour of the line changes to RED and then returns to Green after 1 second.

| | |
|-------------|-------|
| AUTO SEARCH | |
| PR NO | -- |
| SKIP | ON |
| SEARCH | DN/UP |
| STATION | ---- |
| ▶ STORE TO | PR-- |

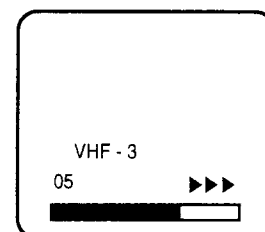
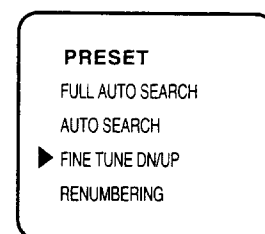
3. FINE TUNE DOWN/UP

If you are unable to get a good picture or sound because of a poor broadcasting signal it is possible to adjust the fine tuning to try and improve reception.

In the Preset Menu move the cursor to FINE TUNE DN/UP and press the LEFT **6** or RIGHT, **7** buttons to activate FINE TUNE DN/UP.

Note that it only operates whilst the LEFT or RIGHT button is being pressed and that after fine tuning has been completed, the PR No. changes from green to yellow.

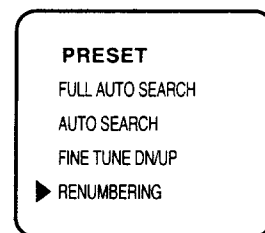
Please note that if you quit the MENU by pressing the TV **9** button after a Fine Tune adjustment, the new tuning is memorized.



4. RENUMBERING (option : PAL-I MODEL)

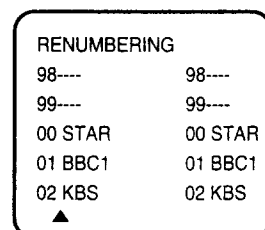
Renumbering is used to re-arrange the PR.No and station names.

In the Preset Menu move the cursor to RENUMBERING and press ENTER **3**.



The Renumbering sub-menu is displayed as shown. The centre line is shown in red and the other lines in green.

Place the cursor at the bottom of your selected side by using the UP **4** or DOWN **5** button. When a LEFT **6** or RIGHT **7** button is pressed the programme number can be moved by the DOWN **5** or UP **4** button. Note that the channel display on the screen is shown in the centre line of the left side. Exchange is executed by pressing the ENTER **3** button, whereupon the content of TV programme and station name will be exchanged.



SYSTEM

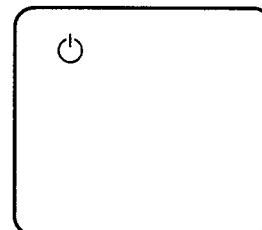
This button is valid in AUTO SEARCH menu and normal TV mode.

The SECAM-L mode is selected by this button and selected mode is stored to each PR. The SECAM-L mode is displayed as "FRANCE" in normal TV mode and "F" in AUTO SEARCH menu.

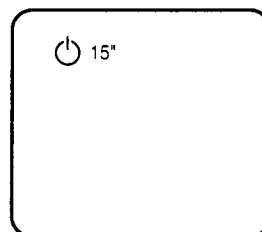
SLEEP 14

By pressing the SLEEP 14 button you can set your TV to turn automatically off up to two hours ahead.

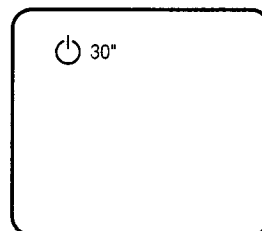
When you press the SLEEP 14 button the OFF sign of the non-set sleep-timer appears in the upper left side of the screen.



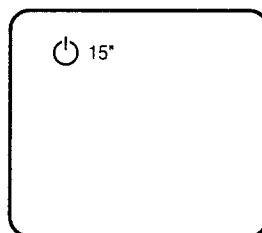
Press the SLEEP 14 button again and 15 minutes is set to the timer. The on screen display stays for five seconds unless any button is pressed.



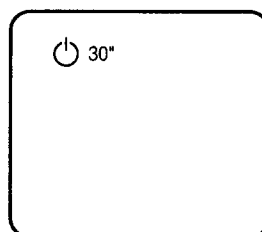
If the SLEEP 14 button is pressed again within 5 seconds then the setting time is increased by 15 minutes, up to a maximum timer setting of two hours (120 minutes).



During the operation of the Sleep-Timer, if the SLEEP 14 button is pressed again the remaining time on the Sleep-Timer is displayed on the screen.



If the SLEEP 14 button is pressed again then 15 minutes replaces whatever time is left and a further 15 minutes is added each time the button is pressed, as before.



When the remaining time on the Sleep Timer becomes zero, the TV is turned off.

Note: If a broadcast signal is not continuously present for approximately 15 minutes, the TV will automatically be turned off if it is in TV mode. In AV mode, however, this function does not operate.

NORMAL 10

Select one of the three possible preferred settings for your TV picture.

Favourite

FAVOURITE

Normal I

NORMAL I

Normal II

NORMAL II

The three levels of setting are as follows:

| Preference | Brightness | Contrast | Colour | Sharpness |
|------------|------------|------------|------------|------------|
| Favourite | User Store | User Store | User Store | User Store |
| Normal I | 38/64 | 58/64 | 48/64 | 58/64 |
| Normal II | 48/64 | 38/64 | 48/64 | 38/64 |

RECALL 11

The RECALL 11 button is used to display the current state or mode of the TV.

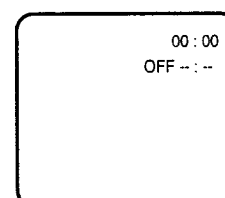
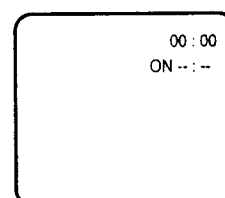
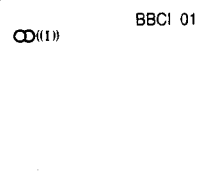
1. Station Name, PR No., Current Sound mode.
2. Current Time and On Time.
3. Current Time and Off Time.

This display appears for 4 seconds unless any button is pressed and whenever it is pressed again it changes as follows:

Press again within 4 secs and display changes to current time and ON time.

Press again, and display changes again to current time and OFF time.

Press again, and the screen is cleared. If you keep this button pressing the sequence repeats itself.

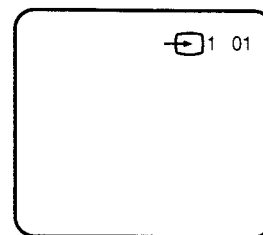


TV AND AV ③

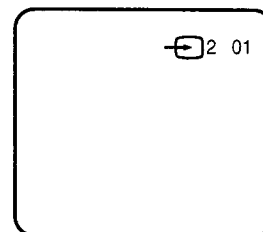
Use the AV ③ button on the Remote Control or TV/AV ② button on the front of the TV to select one of the four options or two external inputs you may wish to view.

Whenever the TV/AV ② button is pressed the on-screen display will be changed as shown:

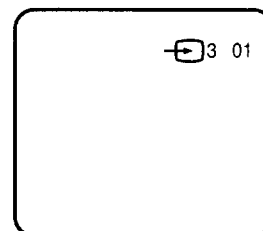
Press once



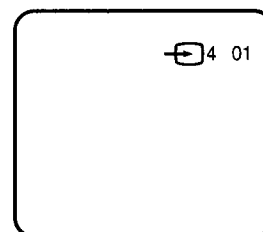
Press again



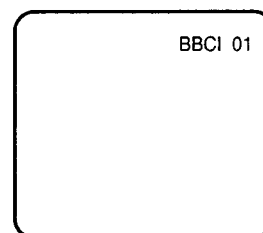
Press again



Press again



Press again



But, when you press the AV ③ button on the Remote Control the screen display will follow exactly the same pattern except for the last change when it will return to AV1 not TV. To return to TV press button. TV ⑤ button.

The descriptions of each input are as shown below:

AV1: Full Euro Scart

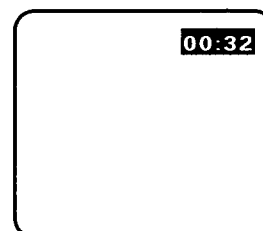
AV2: S-VHS Euro Scart

AV3: RCA Input (option)


AV4: S-VHS Input (option)

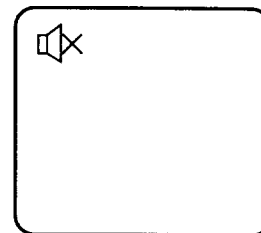
TIME ⑩


When the TIME ⑩ button is pressed in TV mode, the Time is displayed for 5 seconds on the upper right side of the screen. The Time is extracted from the Teletext signal, however, and if the programme you are watching has no Teletext transmission present no time will be displayed.

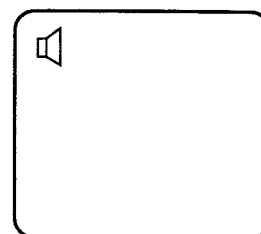


MUTE 13

Pressing the MUTE 13 button cuts off all sound from the speaker and displays  on the screen in red.

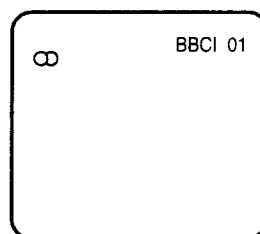


To return to full sound, press the MUTE 13 button again: sound will return and  will be displayed on the screen in red.

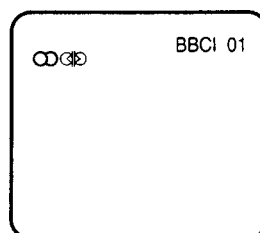


PSEUDO 19

The PSEUDO 19 button is used to obtain a pseudo stereo effect with mono transmissions. When the button is pressed once an EFFECT indication as shown appears on the upper left side of the screen in red and the station identification is on the top right side.

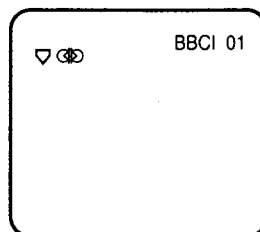


Press the button again and a further EFFECT indication appears as shown.

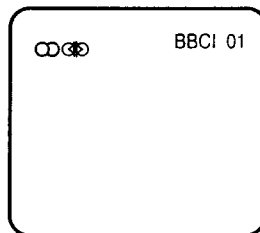


MODE 20

The MODE 20 button is used to change the sound mode. During a stereo transmission, pressing the button will change the sound from stereo to mono.



Pressing it again will change it back to stereo. During a bilingual programme transmission, pressing the MODE button will change the language to the second channel: pressing again will change it back to the main channel.



■ TELETEXT

The Teletext service is carried on a TV transmission signal, therefore it is only available when a TV programme can be received on your TV. Your choice of TV programme also governs which Teletext service you will receive (CEEFAQ for BBC1 and 2, Oracle for ITV and Channel 4).

GETTING STARTED

First, turn on your TV and choose your TV programme.
Then press the TEXT button **17** to switch the receiver to TV mode.

Note that when Teletext is first selected, index page 100 is automatically obtained when the TV is in TOP mode. If the TV is in LIST mode, then the Teletext page which is stored in the red rank is obtained.

To select any other page simply press the three of the PAGE SELECTOR **15** buttons or PAGE DOWN **5** or UP **4** button. The Page number requested is displayed on the upper left side of the screen and when the third digit (each main page number consists of three digits) is entered the page header display changes colour from white to green to indicate that the page currently being displayed is not yet the requested page. On receiving the new page the header changes to white, and the rolling number in the centre is stationary.
To return to normal TV operation the TV **9** button is pressed.

Note that if the new page requested is a newsflash or subtitle page, the normal TV picture is automatically turned on and the newsflash or subtitle displayed in a box within the picture.

PAGE SELECTOR 0-9 **15**

In Teletext mode, the PAGE SELECTOR **15** buttons are used to enter a page number or subcode. As digits are entered they are displayed as shown.

| | | |
|-------------|---|--|
| 1st Digit:- | 1 | See SUBCODE for details on how to enter sub-code page numbers. |
| 2nd Digit:- | 2 | |
| 3rd Digit:- | 3 | |
| 4th Digit:- | 4 | |

During digit entry page acquisition is stopped.

PAGE DOWN/PAGE UP **4** & **5**

Page Number DOWN **5** and UP **4** buttons decrease or increase the current page number by 1.

INDEX () 21

When the Index 21 button is pressed in TOP mode, the Teletext decoder is set up to display the index page. Press once for Main Index Page: press again for full index. When the TV is in LIST mode this button has no function.

MIX () 8

In normal Teletext mode TV picture and character data are not displayed simultaneously. The MIX 8 button allows a combined display of TV picture and character data.

SIZE () 20

By pressing the SIZE 20 button either the top or the bottom half of the Text display can be expanded. Press the SIZE button 20 once and the top half of the display is expanded. Press again and the bottom half is expanded. Press again and the display returns to normal size characters.

BROWSE () 10

The BROWSE 10 button allows the user to scan very easily through the entire database. In its simplest sense, BROWSE instructs the decoder to capture the next complete Teletext page which arrives, therefore it can be seen as an almost instant way of accessing random pages in the Teletext database and thereby removing the need of pressing buttons to glance a unfamiliar pages.

REVEAL or RECALL () 11

Some Teletext pages play a role to conceal the display, for example a quiz page with concealed answers. The REVEAL button releases the concealed text as long as it is not pressed again.

HOLD () 19

Some Teletext pages contain more information than can be displayed simultaneously therefore they are sub-divided into a series of two or more pages.

The first sub-page series of four sub-pages will, for example, be indicated by a 1/4 display on the top right side of the text page. These sub-pages are automatically rotated, each page being displayed for a set time before being replaced by the next page. If you need to read a certain page for longer than is allowed, or retain a particular sub-page, then the HOLD 19 button should be pressed.

The HOLD symbol will be displayed on the top left side instead of the page number and page acquisition will be stopped.

Normal operation is restored by pressing the HOLD 19 button again or by entering a new page number.

CANCEL () 18

The CANCEL 18 button suppresses the Text display and restores the normal TV picture while the receiver remains in Teletext mode. This function allows you to request Teletext pages and alter Teletext controls without interrupting a TV programme.

SUBCODE () 16

For Teletext information which is longer than one page, it may take some time for the automatic changing of sub-pages to reach the sub-page you require. It is possible, however, to enter the sub-page you require and continue watching a normal TV programme until the correct sub-page has been reached.

Press SUBCODE 16 button.

The characters Pxxx/--- will be displayed on the bottom left side of the Text screen.

Enter the desired sub-page number. EG. To select sub-page 10, press 0,0,1,0 buttons.

Press CANCEL 18 button to return to normal TV programme.

When the correct sub-page is reached, the main page number will be superimposed on the normal TV picture.

Press the Teletext 17 button to display the stored sub-page.

R, G, Y, C 22

When the TV is in LIST mode the page numbers available for the four coloured buttons (R.,G.,Y.,C.) are displayed in the Text status row. Your selection is made by pressing the coloured button 22 that correspond with the desired coloured number.

L / F / T 12

Press the L/F/T 12 button to select the Teletext LIST mode. The letter "L" and four coloured page numbers will appear at the bottom of the screen. To see one of these pages, press the matching coloured button 22 (R.,G.,Y.,C.).

To change the favourite page numbers press a coloured button 22 and then three page selector 15 buttons on the remote control in sequence.

e.g. To select page 100 on the RED background, press the R 22 button, then three digits 15 (1,0,0) in sequence. Page 100 will be shown on the red background.

This can be repeated with other page numbers and colours as required.

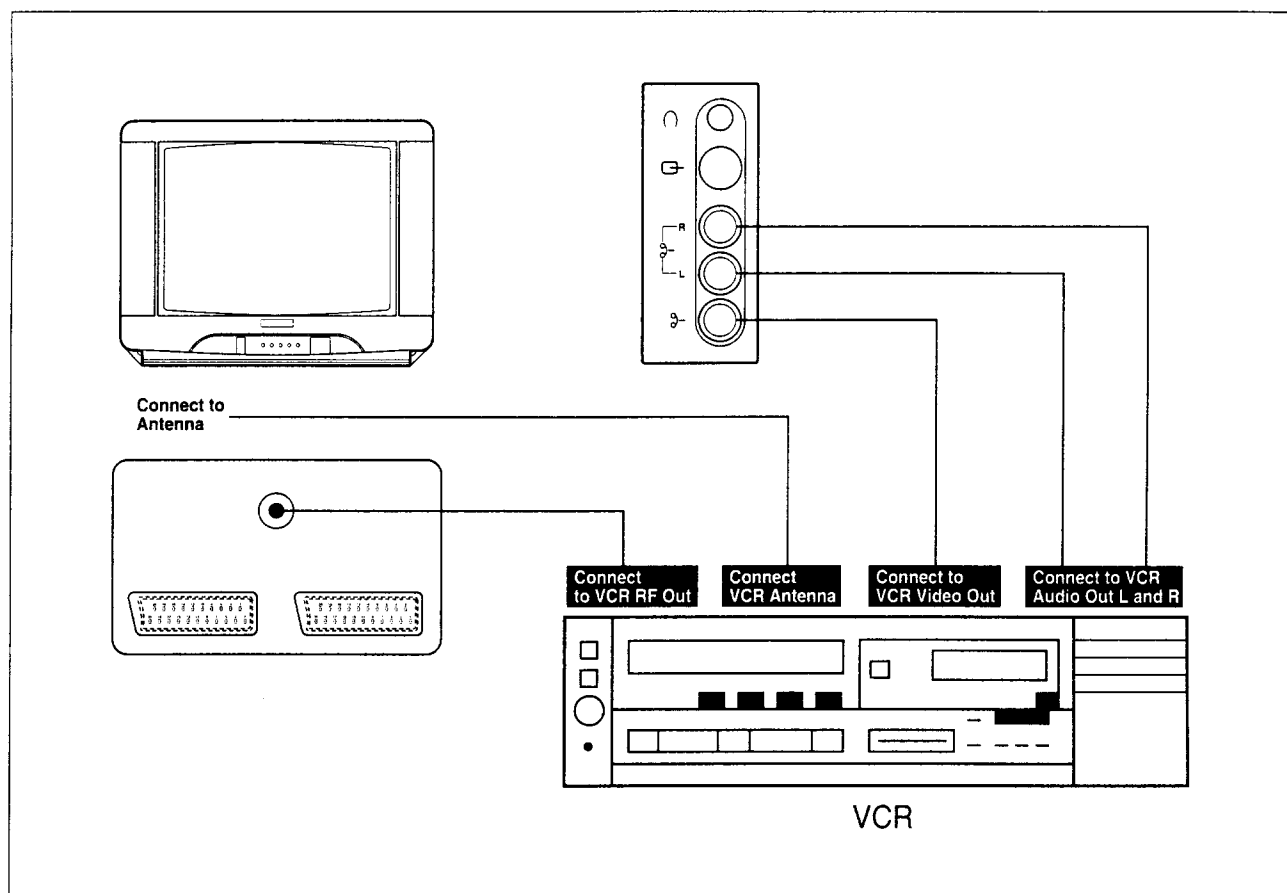
STORE () 3

The STORE 3 button is used to store a list of numbers. While the list is being stored the coloured numbers turn to white for 3 seconds.

■ CONNECTING THE EXTERNAL EQUIPMENT

Your TV is equipped with a 21-pin EURO-SCART for the connection of desired equipment.

To connect a VCR please refer for full details to the Instruction Manual for your VCR. The diagram below shows the basic connections.



USE OF THE 21-PIN SCART TERMINAL

A personal computer, VCR, Video disc or other AV apparatus can be connected to the 21-pin socket (EURO-SCART) on the rear panel of your TV.

• Use of Video equipment

- With equipment which has an 8-pin input function signal in the 21-pin socket you can play programmes from VCR tapes or video discs etc.

When you connect the SCART-1 apparatus to the TV through the 21-pin terminal, the programme display will be automatically changed to AV1 mode. If the equipment does not change the function signal, change the AV1 mode yourself to enable playback as required.

• Use of Personal Computer

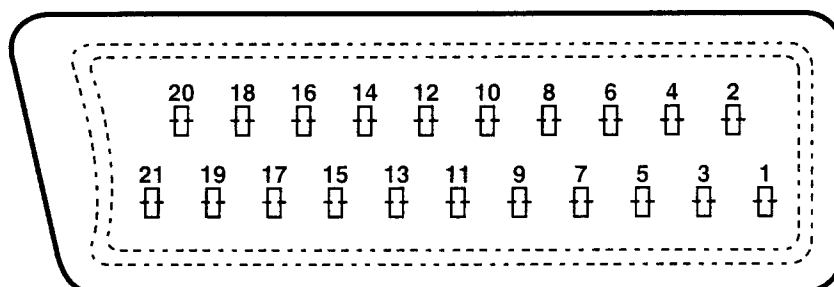
- The personal computer must be the type which has a 16-pin fast signal (TV/RGB switching) through a 21-pin socket. If the personal computer is not this type but has an RF output terminal, you can connect it to the antenna terminal on the TV.

NOTE :

In TV mode, if a broadcasting signal is not continuously present for approximately 15 minutes, the receiver will be automatically turned off. In AV mode, however, this does not happen.

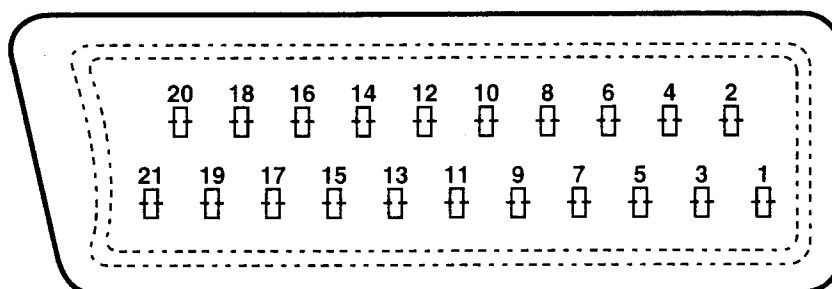
■ SCART SOCKET 1 CONNECTIONS(AV1) _____

| PIN | DESCRIPTION | PIN | DESCRIPTION |
|-----|----------------------------|-----|-----------------------------|
| 1 | Audio Output (R) | 12 | Not Connected |
| 2 | Audio Input (R) | 13 | Earth (Red) |
| 3 | Audio Output (L) | 14 | Earth (Blanking) |
| 4 | Earth (Audio) | 15 | Red (R) Input |
| 5 | Earth (Blue) | 16 | RGB Switching (Blanking) |
| 6 | Audio Input (L) | 17 | Earth (Video Out) |
| 7 | Blue (B) Input | 18 | Earth (Video In) |
| 8 | Function Switching (TV/AV) | 19 | Video (Sync.) Output |
| 9 | Earth (Green) | 20 | Video (Sync.) Input |
| 10 | Not Connected. | 21 | Earth (Case) |
| 11 | Green (G) Input | | |



■ SCART SOCKET 2 CONNECTIONS(S-VHS INPUT, AV2) —

| PIN | DESCRIPTION | PIN | DESCRIPTION |
|-----|-----------------|-----|------------------|
| 1 | Not Connected | 12 | Not Connected |
| 2 | Audio Input (R) | 13 | Earth |
| 3 | Not Connected | 14 | Earth |
| 4 | Earth (Audio) | 15 | C Input |
| 5 | Earth | 16 | Not Connected |
| 6 | Audio Input (L) | 17 | Earth |
| 7 | Not Connected | 18 | Earth |
| 8 | Not Connected | 19 | Earth |
| 9 | Earth | 20 | Y or Video Input |
| 10 | Not Connected | 21 | Earth (Case) |
| 11 | Not Connected | | |

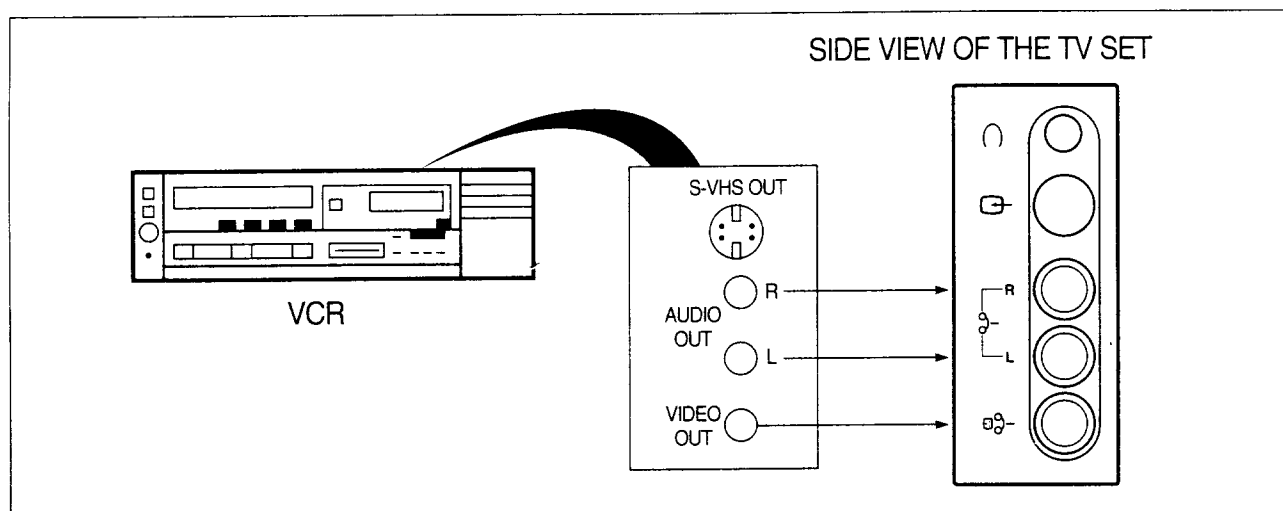


USE OF RCA JACK(A/V INPUT) TERMINALS

- The Audio/Video input terminals can be used for connection of devices such as video cassette recorders, video disc players, satellite receivers, video cameras, personal computers etc. Which have Audio/Video output terminals.
- Connect the video input terminal to the video output terminal of the external device. The terminal is a phono pin type.
- Connect the Audio-R/L input terminal to the Audio-R/L output terminal of the external device. The terminal is a phono pin type.

NOTE :

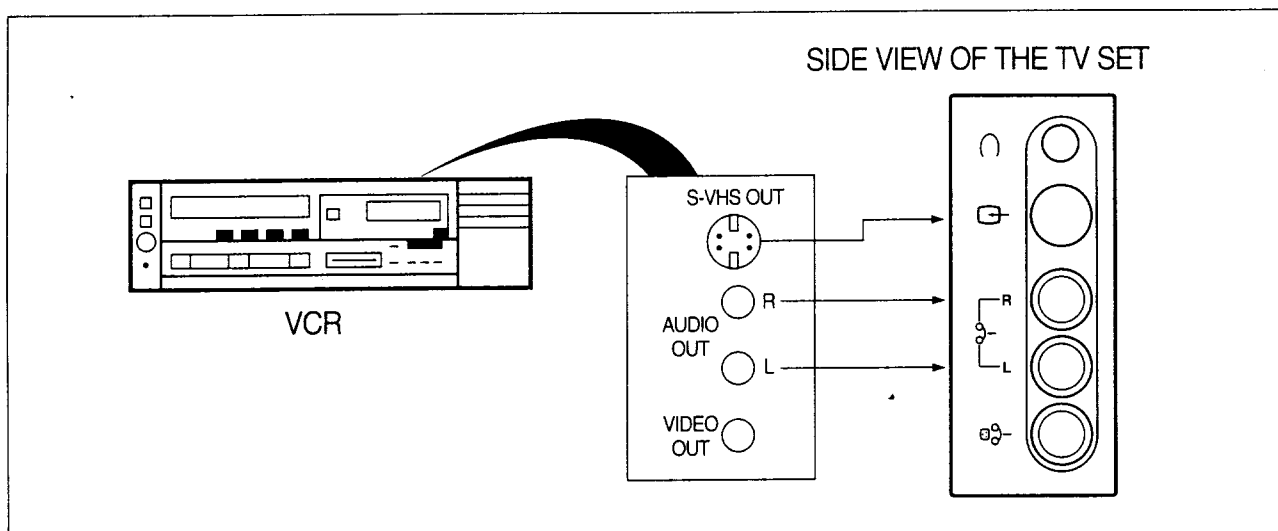
As connection terminology and individual operating features of the equipment may vary, to ensure proper operation be sure of reading carefully the operating manuals for the VCR and other equipment you are using.



- To set the TV to AV3 mode press the button on the Remote Control. The AV3 is displayed on the upper part of the screen to be used as a monitor for Audio/Video signals from a VCR, Video disc player, personal computer etc.

USE OF SUPER-VHS TERMINAL

- The Super-VHS input terminal can be used for the connection of devices such as video cassette recorders, video disc players, etc which have the S-VHS output and Audio-R/L output terminal. Connect as shown in the illustration.
- To set the TV to AV4 mode, press the button on the Remote Control until AV4 is displayed on the screen.
- Your TV is also equipped with a 6mm stereo headphone jack plug.
- The volume is controlled on the headphone in the normal way and when the headphone jack is inserted the internal loudspeakers are muted.



■ TROUBLESHOOTING

Sometimes a performance problem can be easily solved by checking seemingly apparent but often overlooked possibilities.

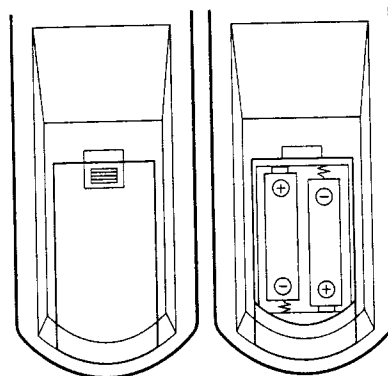
Checking these points before asking for service could save your time and money.

| SYMPTOM | CHECK POINT |
|-------------------------------------|---|
| No picture and sound. | <ul style="list-style-type: none"> • Check the TV set is plugged in. • Check the Volume, Brightness and Contrast controls are set to the minimum positions. |
| Picture is OK, but no sound. | <ul style="list-style-type: none"> • Check the Volume control is set to the minimum position. |
| Sound is OK, but no picture | <ul style="list-style-type: none"> • Check the Brightness and Contrast controls are set to the minimum position. |
| No colour | <ul style="list-style-type: none"> • Check the Colour control is set to the minimum position. |
| Excessive noise in picture. | <ul style="list-style-type: none"> • Check the Antenna cable is broken or disconnected or damaged. |
| Diagonal stripes appear on picture. | <ul style="list-style-type: none"> • The picture may be affected by an interfering signal. (eg. from near by amateur radio transmitters or another TV set). • The interference can be reduced to some extent by adjusting the direction or height of the antenna or, if a twin lead antenna cable is being used, replacing it with a coaxial cable. |
| Picture has "snow" | <ul style="list-style-type: none"> • Check the Antenna cable is broken or disconnected or damaged. • Small dot on the screen caused by a weak aeria signal. |
| Ghost images appear. | <ul style="list-style-type: none"> • Check the Antenna direction has changed after a storm or strong wind etc. • Ghost images are caused by a signal reflected from a large building or a hill:the direction or height of the antenna should be chosen well in order to minimize the ghost images. |

■ BATTERY INSTALLATION

The remote control unit operates with two 1.5V size AAA (penlight) batteries which are supplied from the factory.

1. Turn the remote control unit upside down.
Press down on the battery compartment grip and slide the cover in the direction of the arrow.
2. Install the two batteries making sure that battery polarity matches with the (+), (-) marks inside of the battery compartment.
Incorrect polarity could damage to the unit.
3. Close the battery compartment cover.

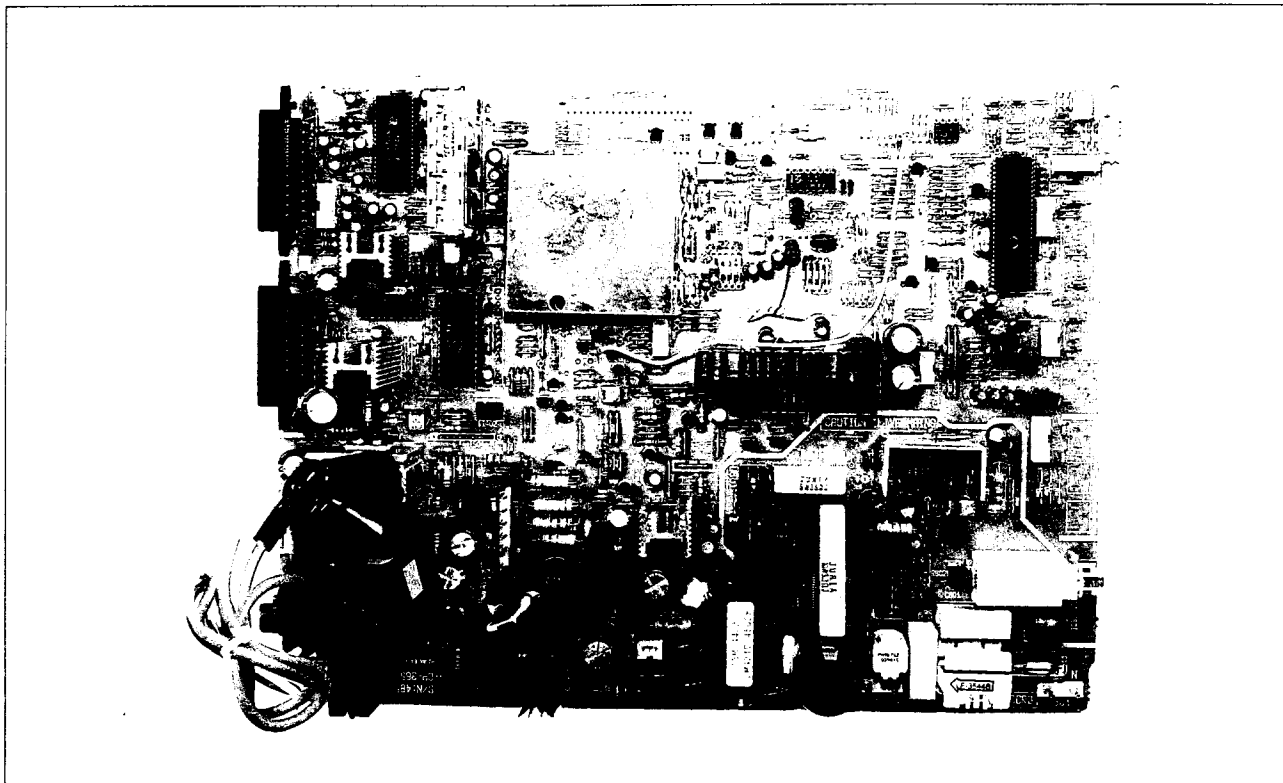


NOTE :

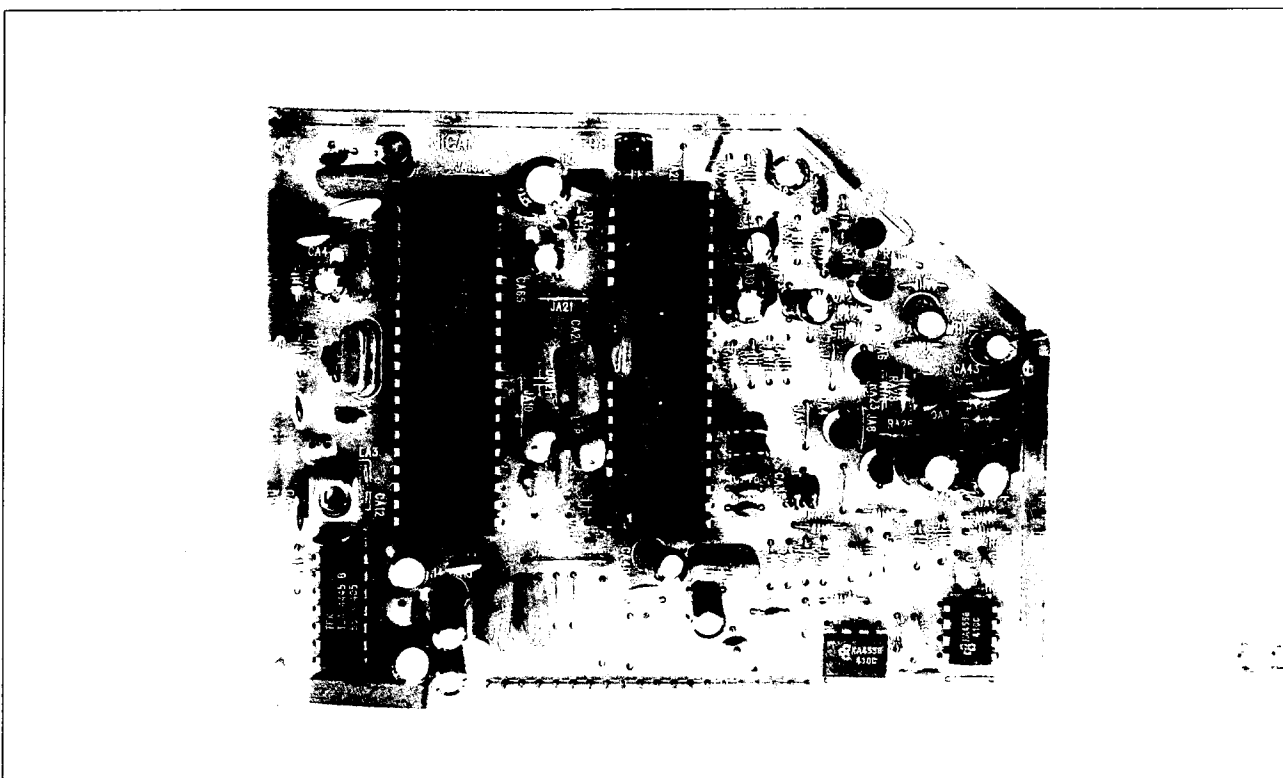
- The remote control unit is designed to operate within a distance of about 7 meters. If malfunction occur even though you are within the effective operating range, batteries may be weak and required replacement.
- Do not mix new and old batteries.

■ ASSEMBLY VIEW

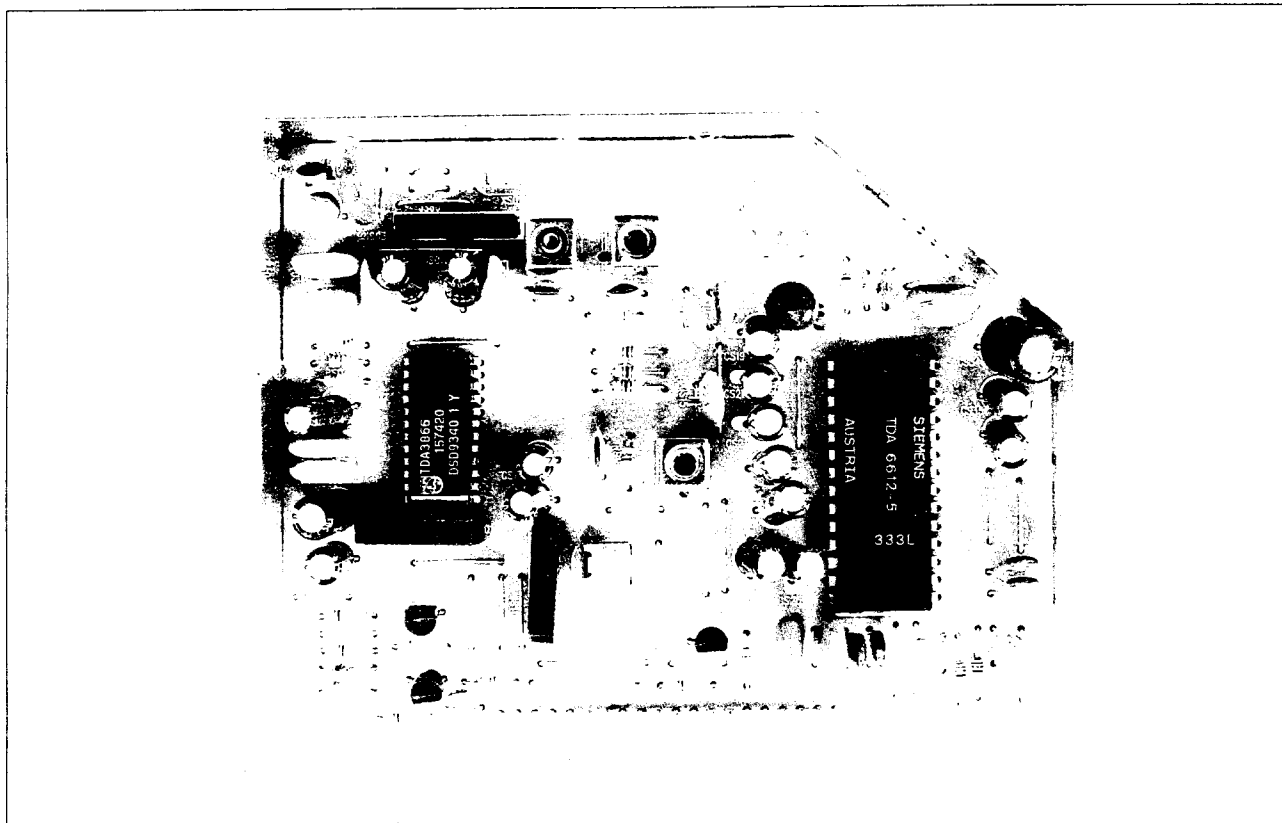
MAIN BOARD VIEW



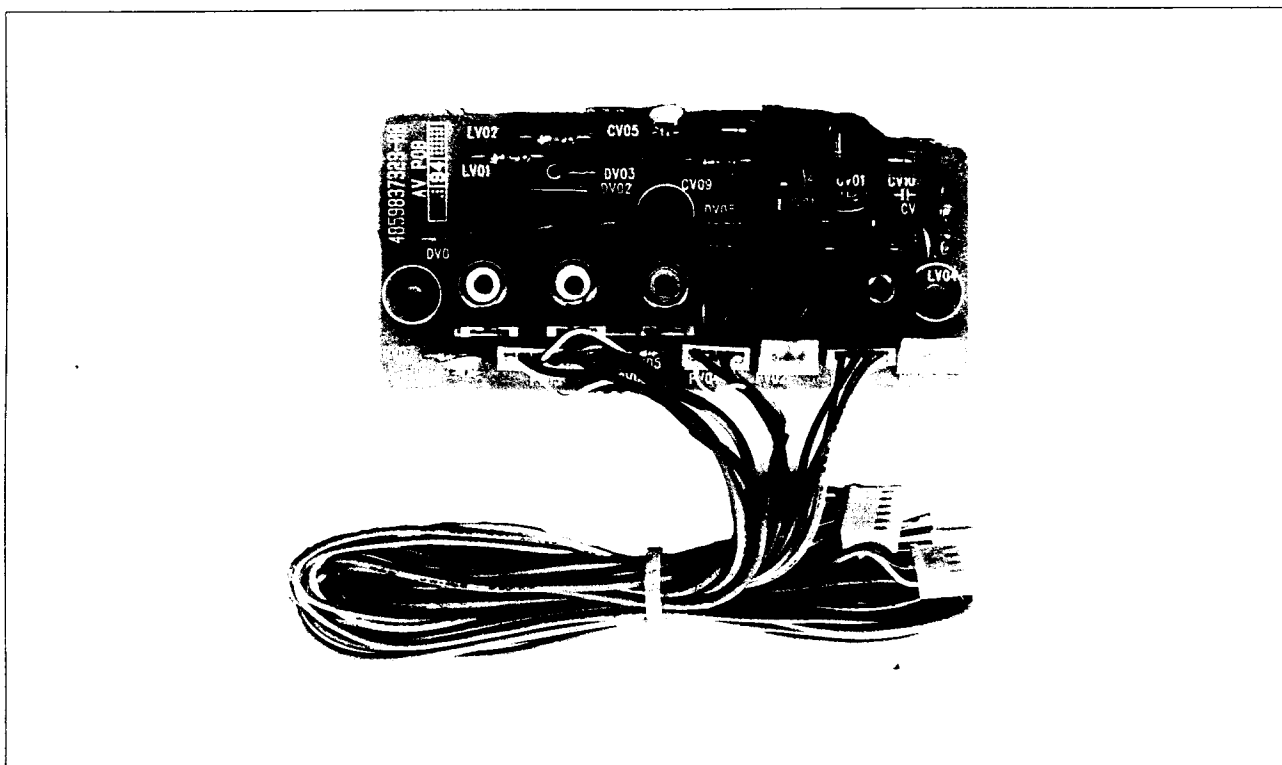
NICAM BOARD VIEW



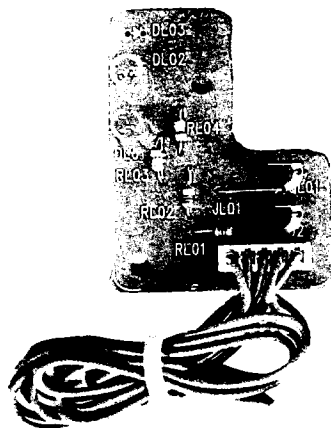
2-SOUND BOARD VIEW



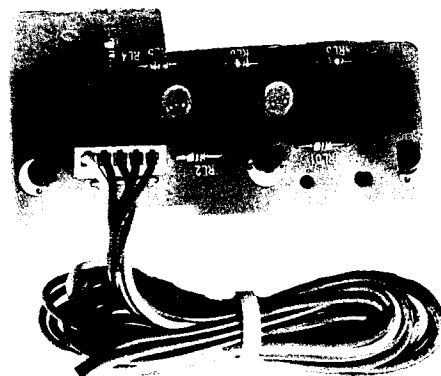
AV JACK BOARD VIEW



LED BOARD VIEW

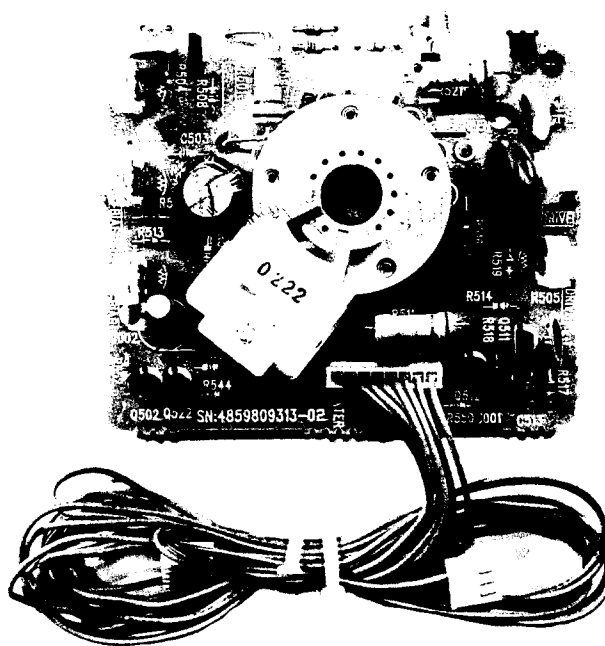


(2066, 2075)

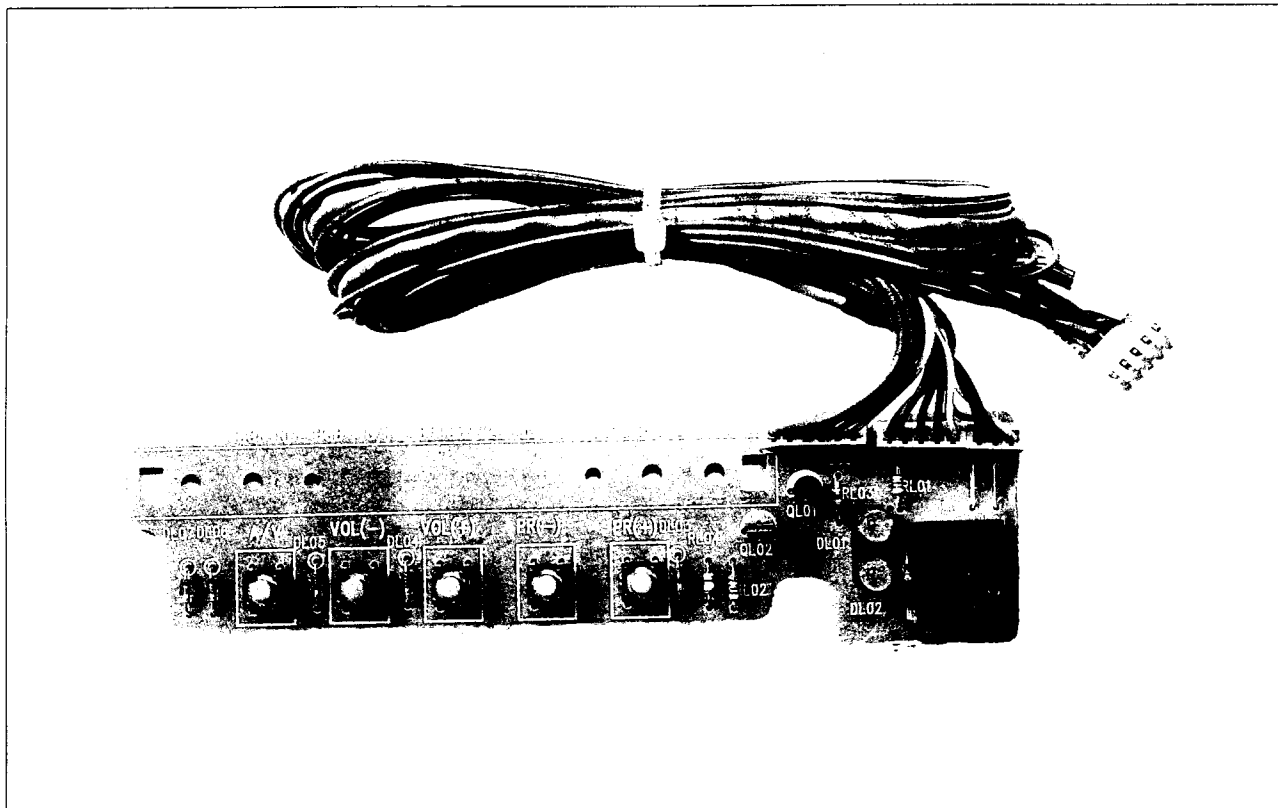


(2166)

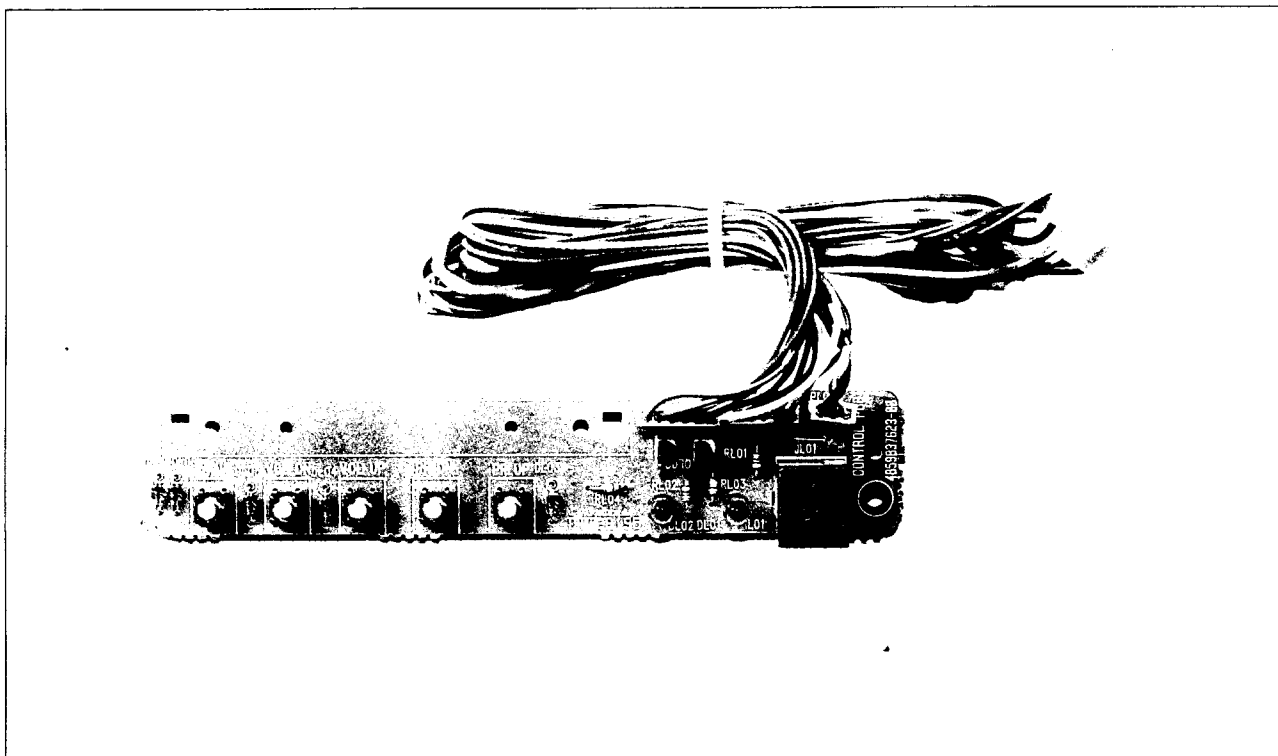
CRT BOARD VIEW



CONTROL BOARD VIEW (20CI)



CONTROL BOARD VIEW (2195)



■ INSTALLATION & SERVICE ADJUSTMENTS

GENERAL INFORMATION

All adjustments are thoroughly checked and corrected when the receiver leaves the factory. Therefore the receiver should operate normally and produce proper colour and B/W pictures upon installation. But, several minor adjustments may be required depending on the particular location in which the receiver is operated. This receiver is shipped completely in a card-board carton. Carefully draw out the receiver from the carton and remove all packing materials.

Plug the power cord into a AC power outlet. Turn the receiver ON and adjust the FINE TUNING for the best picture detail. Check and adjust all the customer controls such as BRIGHTNESS, CONTRAST and COLOUR Controls to obtain a natural B/W picture.

PROTECTION CIRCUIT CHECK

1. Turn on the receiver.
2. The receiver must be turned off and changed in stand-by mode.
3. Disconnecting the resistor, the receiver should be turned on.

HIGH VOLTAGE CHECK

1. Connect an accurate high voltage metre to the anode of the picture tube.
2. Turn on the receiver. Set the BRIGHTNESS and CONTRAST controls to minimize (zero beam current).
3. High voltage should be below 27.5kv (21": 29.5kv)

AUTOMATIC DEGAUSSING

A degaussing coil is mounted around the picture tube so that external degaussing after moving the receiver is normally unnecessary. Providing the receiver is properly degaussed upon installation. The degaussing coil operates for about 1 second after the power of the receiver is switched ON. If the set is moved or placed in a different direction, the power switch must be switched off for at least 15 minutes in order to make the automatic degaussing circuit operate properly.

Should the chassis or parts of the cabinet become magnetized to cause poor colour purity, use an external degaussing coil. Slowly move the degaussing coil around the faceplate of the picture tube, the sides and front of the receiver and slowly withdraw the coil to a distance of about 2m before disconnecting it from the AC source.

If colour shading still persists, perform the COLOUR PURITY ADJUSTMENT and CONVERGENCE ADJUSTMENTS procedures, as mentioned later.

■ DYNAMIC CONVERGENCE ADJUSTMENT

Dynamic convergence (convergence of the three colour field at the edges of the CRT screen) is accomplished by proper insertion and positioning of three rubber wedges between the edges of the deflection yoke and the funnel of the CRT. This is accomplished as follows:

1. Switch the receiver on allow it to warm up for 15 minutes.
2. Apply crosshatch pattern from dot/bar generator to the receiver. Observe spacing between lines around edges of the CRT screen.
3. Tilt the deflection yoke up and down, and insert tilt adjustment wedges 1 and 2 between the deflection yoke and the CRT until the mis-convergence illustrated in figure. 2 (A) has been corrected.
4. Tilt the deflection yoke right and left, and insert tilt adjustment wedge 3 between the deflection yoke and the CRT until mis-convergence illustrated in figure. 2 (B) has been corrected.
5. Alternately change spacing between, and depth of the insertion of, the three wedges until proper dynamic convergence is obtained.
6. Use a strong adhesive tape to firmly secure latch of the three rubber wedges to the funnel of the CRT.
7. Check purity and readjust, if necessary.

■ STATIC (CENTRE) CONVERGENCE ADJUSTMENT (ORION, SAMSUNG WF CRT)

1. Switch the receiver on and allow it to warm up for 15 minutes.
2. Connect the output of a crosshatch generator to the receiver and concentrating on the centre of the CRT screen, proceed as follows:
 - a. Locate the pair of 4 pole magnet rings. Rotate individual rings (Change spacing between tabs) to converge the vertical red and blue lines. Rotate the pair of rings (maintaining spacing between tabs) to converge the horizontal red and blue lines. (Refer to fig. 1 (A))
 - b. After completing red and blue centre convergence, locate the pair of 6 pole magnet rings. Rotate individual rings (change spacing between tabs) to converge the vertical red and blue (Magenta) and green lines. Rotate the pair of rings (maintaining spacing between tabs) to converge the horizontal red and blue (Magenta) and green lines. (Refer to Fig. 1(B))

■ COLOR PURITY ADJUSTMENT (ORION, SAMSUNG WF CRT)

For the best result, it is recommended that the purity adjustment is made in final receiver location. If the receiver will be moved, perform adjustment with it's facing east. The receiver must have been operating 15 minutes prior to this procedure and the faceplate of the CRT must be at room temperature. The receiver is equipped with an automatic degaussing circuit. But, if the CRT shadow mask has come excessively magnetized, it may be necessary to degauss it with manual coil. Do not switch the coil.

The following procedure is recommended while using a dot generation.

1. Check for correct location of all neck components. (See figure. 5)
2. Rough-in the static convergence at the centre of the CRT, as explained in the static convergence procedure.
3. Rotate the picture control to centre of its rotation range, and rotate brightness control to max. CW position.
4. Apply green color signal to procedure a green raster.
5. Loosen the deflection yoke tilt adjustment wedges (3), loosen the deflection yoke clamp screw and push the deflection yoke as close as possible to the CRT screen.
6. Begin the following adjustment with the tabs on the round purity magnet rings set together, initially move the tabs on the round purity magnet rings to the side of the CRT neck. Then, slowly separate the two tabs while at the same time rotating them to adjust for a uniform green vertical band at the CRT screen.
7. Carefully side the deflection yoke backward to achieve green purity. (uniform green screen) Centre purity was obtained by adjusting the tabs on the round purity magnet rings, outer edge purity was obtained by sliding the deflection yoke forward.
Tighten the deflection yoke clamp screw.
8. Check for red and blue field purity by applying red signal and touch up adjustments, if required.
9. Perform black and white tracking procedure.

■ SCREEN & WHITE BALANCE ADJUSTMENT

1. This adjustment is to be made only after warming up at least 15 minutes.
2. Receive B/W pattern signal
3. Set the RGB Bias VR (R522, R512, R502) to MINIMUM.
4. Set the G, B Drive VR (R515, R505) to CENTER.
5. Set the CONTRAST, BRIGHTNESS, COLOR control to MIN, and Sub-brightness control to CENTER.

6. Connect a short clip to P301
7. Rotate the SCREEN control to clockwise or CCW so as to obtain dim horizontal line of one color in R, G and B.
8. Rotate the R, G and B Bias VR of the other color which did not appear on the screen clockwise, until a dim white line is obtained.
9. Rotate the Screen control gradually anti-clockwise until the last horizontal line disappears on the screen.
10. Remove the short chip and set the CONTRAST, BRIGHTNESS, COLOR control to MAX.
11. Set the G, B Drive VR to obtain the best white uniformity on the screen.
12. Rotate the CONTRAST, BRIGHTNESS, COLOR controls until a dim raster is obtained and touch-up adjustment of RGB Bias VR to obtain the best white uniformity on the screen.

■ SUB-BRIGHTNESS ADJUSTMENT

1. White balance adjustment must proceed this procedure.
2. Set the CONTRAST, BRIGHTNESS, COLOR control to MIN.
3. Rotate the SUB-BRIGHTNESS VR (VR201) gradually CCW until the last beam disappears on the screen.

■ VERTICAL HEIGHT ADJUSTMENT

1. Receive RETMA pattern signal.
2. Set the BRIGHTNESS control and CONTRAST control to Max., and the COLOR control to centre.
3. Adjust VR302 for the optimum vertical height and over scanning.

■ VERTICAL CENTER ADJUSTMENT

1. Receive RETMA pattern signal.
2. Adjust VR301 so that the vertical center of the picture may be coincident with the mechanical center of CRT.

■ HORIZONTAL CENTER CONTROL

1. Receive RETMA pattern signal.
2. Adjust VR401 so that the horizontal centre of the picture may be coincident with the mechanical centre of CRT.

■ FOCUS VOLTAGE ADJUSTMENT

1. Receive RETMA pattern signal.
2. Adjust the FOCUS VOLUME on the FBT and make the picture on the screen be finest.

■ RF AGC ADJUSTMENT

1. Receive PAL COLOR BAR signal in the VHF high band, where the strength of signal can be 60-65 dB.
2. Set the CONTRAST control to Max., the BRIGHTNESS control to provide adequate black and grey scales.
3. Maintain the fine tuning on the screen, and adjust VR101 (AGC DELAY CONTROL VR.) in order that it may be located on the position which the picture noise disappear on the image.

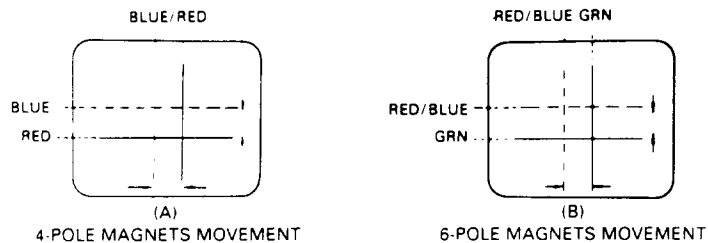


FIG. 1 CENTRE CONVERGENCE BY CONVERGENCE MAGNETS

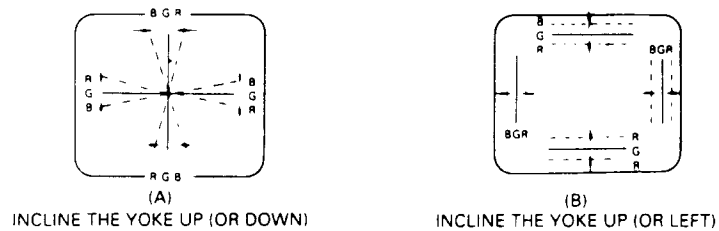


FIG. 2 CIRCUMFERENCE CONVERGENCE BY DEF. YOKE

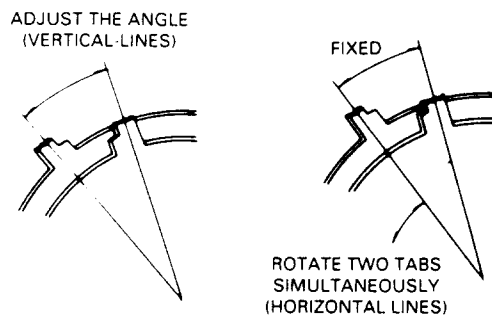


FIG. 3 ADJUSTMENT OF MAGNETS

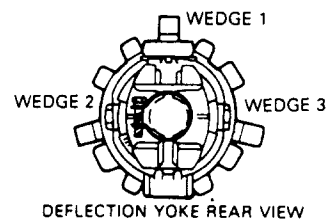


FIG. 4 RUBBER WEDGE LOCATION

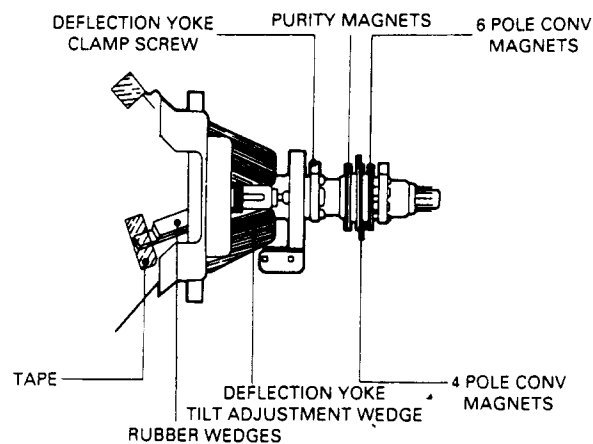


FIG. 5 PICTURE TUBE NECK COMPONENT

PIF ADJUSTMENT

I. APPARATUS CONNECTION & PRESETTING

* CONNECTION

1. Disconnect SLIT 1
2. Connect H-out of LSW-480 to X-axis of the oscilloscope and V-out of LSW-480 to Y-axis of the oscilloscope.
3. Connect the sweep signal output to TP1.
4. Set ATTENUATOR of LSW-480 to 30dB.
5. Supply 15V D.C. voltage (B+) to TP4.
6. Supply 4-5V D.C. voltage to TP3.
7. Connect wire lead between cathode of D401 & I402 #3.

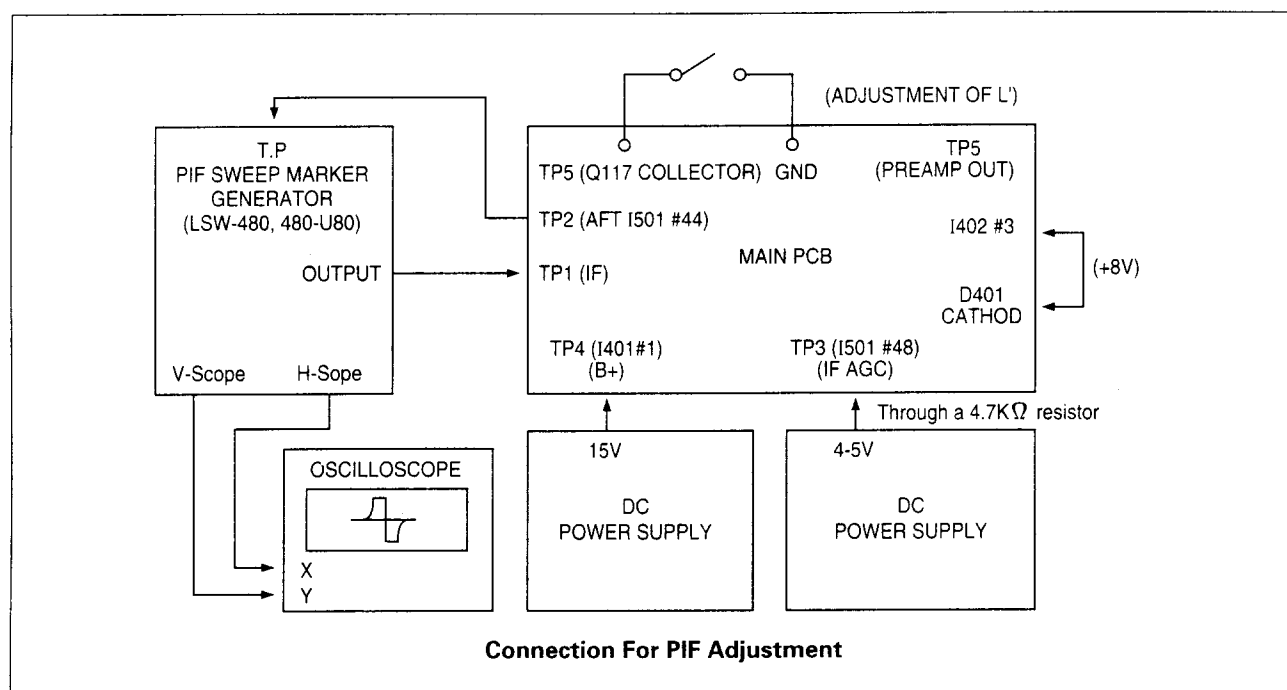
* PRESET

1) Oscilloscope Scaling

- a) Put the scale of X and Y of the oscilloscope to D.C level.
- b) Set the horizontal time display to X-Y
- c) Put the horizontal axis (X) to 1V/div. and the vertical axis (Y) to 2V/div.

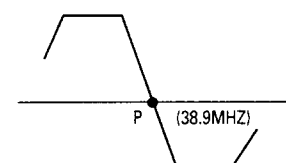
2) LSW-480 MARKER FREQ. SETTING.

| | fp(n+1) | fs | fc | fp-2 | fp | fs(n-1) |
|--------------|---------|------|-------|------|------|---------|
| P/S-B/G,L/L' | 31.9 | 33.4 | 34.47 | 36.9 | 38.9 | 40.4 |
| P/S-B/G | 31.9 | 33.4 | 34.47 | 36.9 | 38.9 | 40.4 |
| P-I | 31.9 | 33.5 | 35.07 | 37.5 | 39.5 | 41 |



II. ADJUSTMENT OF AFT(B/G, L)

1. Connect the test point of LSW-480 to TP2.
2. Adjust L707(AFT COIL) so that the P marker point is located on the reference level.

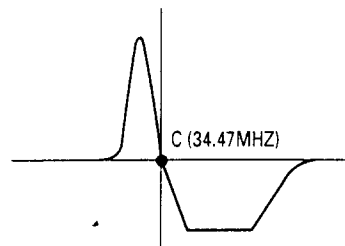


AS system is PAL-I, P carrier is 39.5 MHZ

AFT WAVEFORM

III. ADJUSTMENT OF SECAM-L' AFT

1. Connect TP5 (Q117 COLLECTOR) to GND
2. Adjust VC101 (L'AFT TRIMMER) so that the C marker point (34, 47MHZ) is located on the reference level.



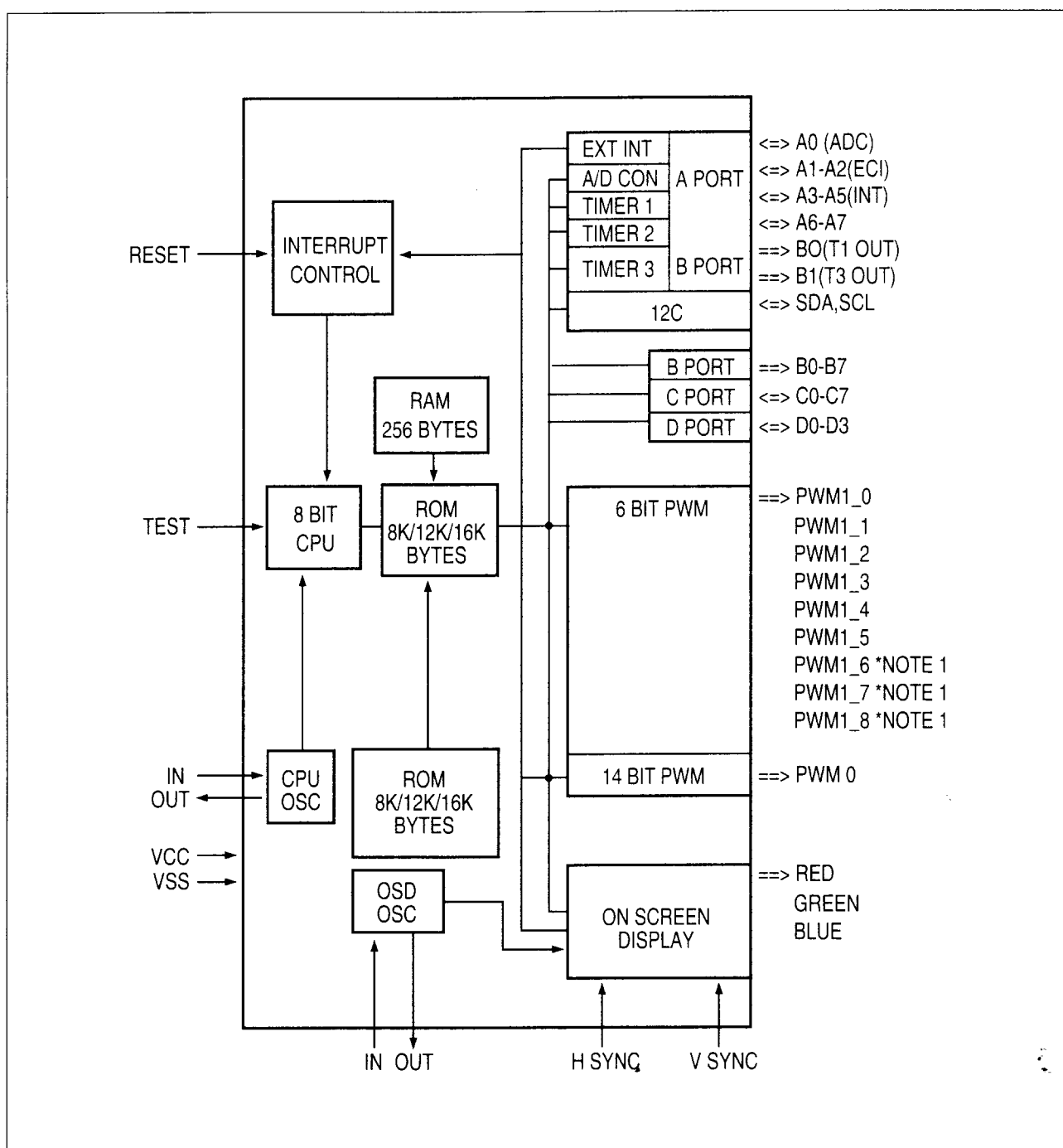
IC OPERATION DESCRIPTION

TMS73C167

(1) General Description

It is a one-chip microcontroller with an 8-bit CPU, 16K ROM, 256 bytes RAM, OSD, A/D converter, three timers (a 16 bit timer and two 8 bit timers)

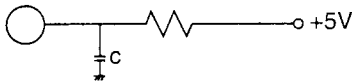
(2) Block Diagram



(3) Description of Terminals

| Pin No. | Symbol | Name | Function Description | | | | | | | | | | | | | | | | |
|---------|-----------|--|---|------|----|----|----|-------|---|---|---|-------|---|---|---|-----|---|---|---|
| 1 | Vt | Tuning Voltage | <ul style="list-style-type: none">The Vt output is the pulse width modulated output of a 14 bit digital. The 14 bit data is split into two parts, the most significant 6bits and the liest significant 8 bits. The 8 bits value determines the interval of basic time. The 6 bit data decides how many TO's are added one by one in the 64 intervals. | | | | | | | | | | | | | | | | |
| 2 | VOL | Volume Control Output | Not used | | | | | | | | | | | | | | | | |
| 3 | BRI | Brightness Control Output | <ul style="list-style-type: none">Outputs the pulse width modulated signal in 63 level in accordance with 6-bit latch data (active "H") | | | | | | | | | | | | | | | | |
| 4 | COL | Colour control Output | | | | | | | | | | | | | | | | | |
| 5 | CON | Contrast control Output | | | | | | | | | | | | | | | | | |
| 6 | SHARPNESS | Sharpness Control Output | | | | | | | | | | | | | | | | | |
| 7 | TINT | Tint Control Output | | | | | | | | | | | | | | | | | |
| 8 | Woofer | Woofer control ON/OFF | Not used | | | | | | | | | | | | | | | | |
| 9 | Mute | Sound Mute Control | <ul style="list-style-type: none">Mute Output is active "H"On power on/off state, instantaneously cut off the sound. | | | | | | | | | | | | | | | | |
| 10 | COR | Contrast Reduction Output | Not used | | | | | | | | | | | | | | | | |
| 11 | BL | Band Selection Output | <ul style="list-style-type: none">There are control band signal output terminals for a tuner.Assignment for bands is as follows: <table><tr><td>Band</td><td>BL</td><td>BH</td><td>BU</td></tr><tr><td>VHF-L</td><td>H</td><td>L</td><td>L</td></tr><tr><td>VHF-H</td><td>L</td><td>H</td><td>L</td></tr><tr><td>UHF</td><td>L</td><td>L</td><td>H</td></tr></table> | Band | BL | BH | BU | VHF-L | H | L | L | VHF-H | L | H | L | UHF | L | L | H |
| Band | BL | | | BH | BU | | | | | | | | | | | | | | |
| VHF-L | H | | | L | L | | | | | | | | | | | | | | |
| VHF-H | L | H | | L | | | | | | | | | | | | | | | |
| UHF | L | L | H | | | | | | | | | | | | | | | | |
| 12 | BH | | | | | | | | | | | | | | | | | | |
| 13 | BU | | | | | | | | | | | | | | | | | | |
| 14 | Hyper | Hyper Band Selection Output | Not used | | | | | | | | | | | | | | | | |
| 15 | LED | STAND BY ON/OFF Control & REMOTE Control | <ul style="list-style-type: none">The switch-mode power supply is controlled "L" ----- power on "H" ----- power offRemote control is received "L" ----- LED OFF "H" ----- LED ON | | | | | | | | | | | | | | | | |
| 16 | LED | On Timer | <ul style="list-style-type: none">ON TIME is controlled "L" ----- LED OFF "H" ----- LED ON | | | | | | | | | | | | | | | | |
| 17 | SYS | System Control Output | <ul style="list-style-type: none">This pin is used to control the sound and IF part for two different TV transmission standard. | | | | | | | | | | | | | | | | |

| Pin No. | Symbol | Name | Function Description |
|---------|---------|--------------------------|---|
| 18 | PSEUDO | System Out | <ul style="list-style-type: none"> This pin is used to control the special, pseudo stereo or only other sound effect in a stereo sound |
| 19 | AFT | 4 Bit ADC Input | <ul style="list-style-type: none"> Comparison voltage input terminal connected to built-in comparator. Input AFT signal from TV with level conversion (0 to Vdd) The results of the comparison are used when the autosearch and digital AFT(described later) works. |
| 20 | KS1 | Key SCAN IN/OUT1 | <ul style="list-style-type: none"> Input and output pin KS1 to KS5 are used to scan to local keyboard matrix. The keyboard is scanned every 25msec; for timing, see as follows. If a key press is detected for 5 periods, it is recognized as a valid key command. The repetition of the local keyboard is 125msec, which is almost equal to the repetition time of the remote control unit. |
| 21 | KS2 | Key SCAN IN/OUT2 | |
| 22 | KS3 | Key SCAN IN/OUT3 | |
| 23 | KS4 | Key SCAN IN/OUT4 | |
| 24 | KS5 | Key SCAN IN/OUT5 | |
| 25 | OKS1 | Option Key Scan Output 1 | <ul style="list-style-type: none"> This pin is used to scan the various system options. An active low signal is generated at the very first switch-on ("COLD START") Local keyboard control inputs OKS1 to OKS3 are read first; all keys on the local keyboard must be released, otherwise it will wait until they are. The pins that have a diode connection to OKS are read back as 0, the pins that do not have such diode connection are read back as a logic 1. |
| 26 | OKS2 | Option Key Scan Output 2 | |
| 27 | OKS3 | Option Key Scan Output 3 | |
| 28 | GND | GND Reference | |
| 29 | DATA | DATA I/O of IMBUS | IMBUS is used to operate NICAM. |
| 30 | ID | Ident of IMBUS | |
| 31 | CLOCK | Clock of IMBUS | |
| 32 | NTSC ID | NTSC Ident Input | |
| 33 | R | OSD Red colour Output | <ul style="list-style-type: none"> Output R,G and B deliver the colour components for the OSD while output BK is used as a test blanking signal. The output polarity of the R,G,B and BK terminals are active "H". |
| 34 | G | OSD Green Colour Output | |
| 35 | B | OSD Blue Colour Output | |
| 36 | Y | Y out of OSD | |
| 37 | H-sync | H-sync input for OSD | <ul style="list-style-type: none"> Input terminal for CRT display horizontal synchronous signal. Input rectangular pulses whose amplitude is in the range from 0 to 5V. The input polarity is active "H" The signal state should be active for the time more than that required for three scanning lines. |

| Pin No. | Symbol | Name | Function Description |
|---------|--------|----------------------|---|
| 38 | V-sync | V-sync input for OSD | <ul style="list-style-type: none"> Input terminal for CRT display vertical synchronous signal. Input rectangular pulses whose amplitude is in the range from 0 to 5V. The signal state should be active for the time more than that required for three scanning lines. The input polarity is active "H" |
| 39 | DOSCI | Clock input for OSD | <ul style="list-style-type: none"> Input DOSC has to be connected to an external RC network which controls the oscillation frequency of the internal OSD pixel oscillator.  |
| 40 | DOSCO | Clock output for OSD | |
| 41 | ID | Sync Ident Input | <ul style="list-style-type: none"> Input terminal of image synchronous signal necessary for auto search and AFT operation. In the case of the determination of the level signal synchronization, the signal state ("H" of "L") which is input at this terminal is determined every 4ms. "H" ----- Presence of synchronization "L" ----- Absence of synchronization |
| 42 | GND | Ground | Should be fixed to "GND" |
| 43 | OSCI | Clock input for CPU | <ul style="list-style-type: none"> The OSCI and OSCO are used to control the onchip oscillator of the μ-controller. SOCI is the input terminal and OSCO the output terminal. All internal timing of the μ-controller (except for the OSD part) are derived from this oscillator. The oscillator frequency has to be 10MHz. |
| 44 | OSCO | Clock output for CPU | |
| 45 | RESET | Reset Input | <ul style="list-style-type: none"> This pin is used to reset the μ-controller after a power-on reset. In order to be sure that the μ-controller starts from an initialized state after the supply voltage is available, a reset signal has to be applied. This reset signal has to be low until a stable 5V supply voltage is available. |
| 46 | S/SW | Scart Input | |
| 47 | IR | Remote Signal Input | <ul style="list-style-type: none"> Remote control signal input terminal. Active "L" |
| 48 | AV3 | AV switching out 3 | Not used |
| 49 | AV2 | AV switching out 2 | Not used |
| 50 | AV1 | AV switching out 1 | <ul style="list-style-type: none"> Output pin AV defines whether internal audio/video signals (TV) or external signal from peripheral TV connector are selected. When output state becomes "H", TV mode is set. When output state becomes "L", AV mode is set. It always start from TV mode. |

| Pin No. | Symbol | Name | Function Description |
|---------|--------|--------------------------------|---|
| 51 | SDA | Data Pin for IIC(I/O) | <ul style="list-style-type: none"> • Pins SCL and SDA are respectively the data and clock wire of the multi-master two-wire bidirection IIC-bus control bus. • If a transmission does not succeed the controller will retry it for up to 5 times. If the bus is occupied for longer than 1.18 seconds the μ-controller will generate bursts of nine clock pulses with intervals of 1.18 seconds until bus is free again. |
| 52 | SCL | Clock Pin for IIC(O) | |
| 53 | POWER | Stand by ON/OFF Control Output | <ul style="list-style-type: none"> • The switch-mode power supply is controlled. "L" ----- power ON "H" ----- power OFF |
| 54 | Vcc | Power supply input terminal | <ul style="list-style-type: none"> • Connected to the 5V power supply. |

TDA8362

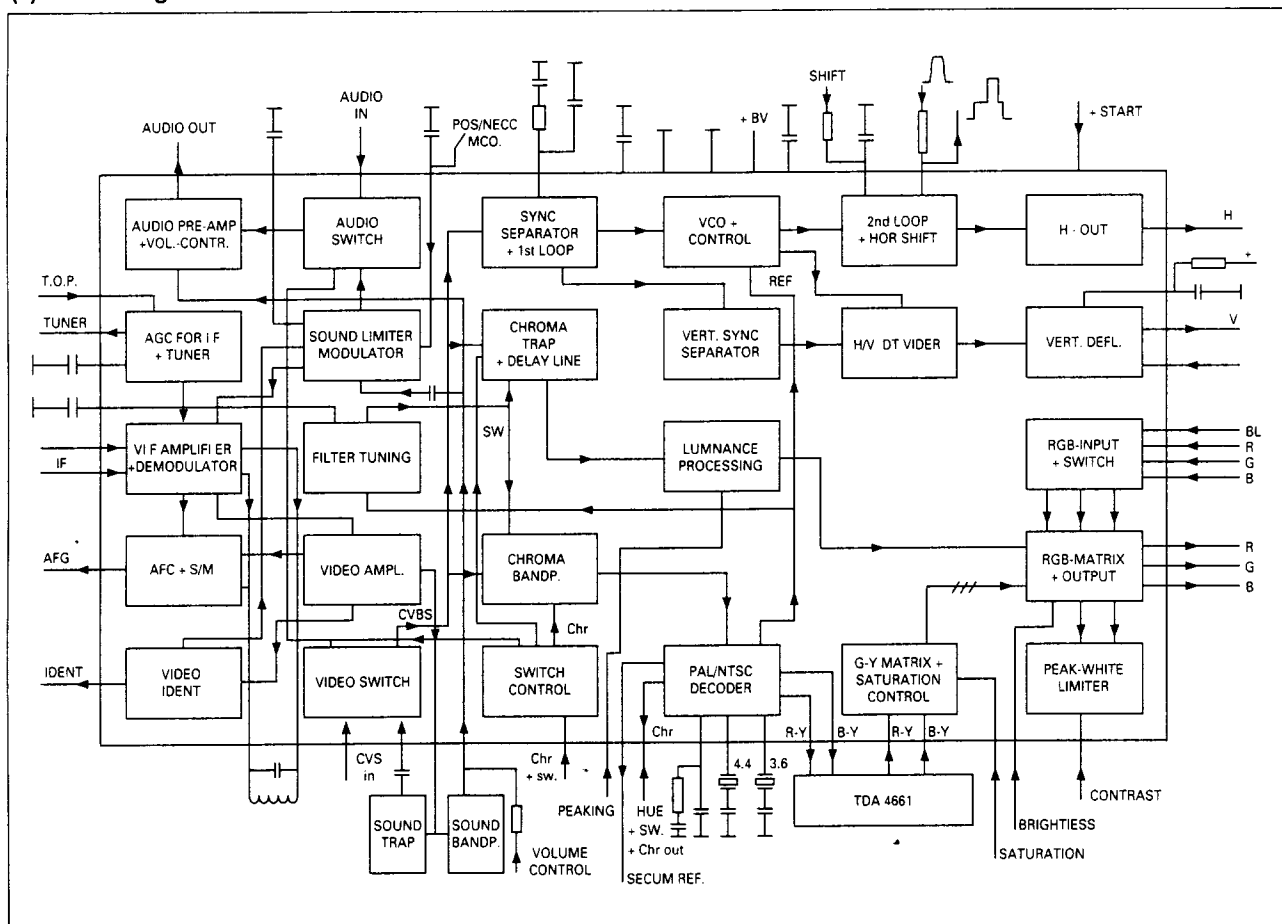
(1) Features

- Multi-standard vision IF circuit (positive and negative modulation)
- Multi-standard FM sound demodulator (4.5 MHz to 6.5 MHz)
- Video and audio switches (CVBS int/ext, S-VHS and audio int/ext)
- Integrated chroma trap and bandpass filters (autocalibrated)
- Luminance delay line integrated
- PAL/NTSC colour decoder with automatic search system
- Easy interfacing with the TDA 8395 (SECAM decoder) for multi-standard applications
- RGB-control circuit with linear RGB inputs and fast blanking
- Horizontal synchronization with two control loops and alignment-free horizontal oscillator
- Vertical count-down circuit and vertical pre-amplifier
- Low dissipation (only 600mW)
- Small amount of peripheral components compared with competition IC's
- Only one adjustment (vision IF demodulator)

(2) Description

- Vision IF amplifier, video demodulator, video amplifier, AGC and AFC suitable for both negative and positive modulation.
- Sound limiter, demodulator and amplifier with volume control.
- Inputs and switches for external audio and CVBS signals.
- Synchronization circuit with drive circuits for horizontal and vertical deflection.
- X-ray protection (combined with the 2nd phase detector pin).
- PAL/NTSC color decoder in which the chroma filters (bandpass and trap) and the luminance delay line have been integrated. The circuit has a separate chroma input and the filters can be switched-off so that S-VHS signals (via an external switch) can be applied to the IC.
- For SECAM applications an (alignment-free) SECAM-decoder can be added to the IC.
- Peaking circuit in the luminance channel.
- RGB-output circuit with linear inputs for On-screen Character Display.

(3) Block Diagram



(4) Pin Description

| Pin No. | Name | Function Description | | | | | | |
|---|------------------------------|--|---------------------------------------|-----------|--|----|---|----|
| 1 | Audio De-emphasis | <p>At this pin the audio signal is available for scart. The signal has an amplitude of 350mVrms (at $\delta f = 50\text{KHz}$) is non volume controlled and has to be buffered. (notice the output impedance influences the deemphasis). For scart requirements the buffer should be dimensioned as an amplifier in order to increase the output signal.</p> <p>A third function of this pin is the positive modulation switch. When the voltage at this pin is above $V_{cc}-1\text{V}$ positive modulation is selected. The current needed is 100μA typical.</p> | | | | | | |
| 2, 3 | IF Demodulator Tuned Circuit | <p>Because the demodulator performance depends on the Q factor, we want to keep the Q factor as high as possible. But this means that the steepness of the AFC will change with the Q factor of the tuned circuit itself and also with the input impedance of the IC. A compromise has to be made. The input impedance of the IC is as large as possible (about 12 kOhms) and the Q factor of normal tuned circuits varies from 70 to 90. By means of an external resistor, it is possible to damp the circuit to a Q of 40 to reduce the steepness variation of the AFC.</p> | | | | | | |
| 4 | Video Identification Output | <p>The identification output has a three level output, 0.5, 6 or 8V.</p> <table><tr><td>Output voltage "video not identified"</td><td>0.5 V max</td></tr><tr><td>Output voltage "video identified" and colour signal available with $f_{sc} = 3.5\text{ MHz}$</td><td>6V</td></tr><tr><td>Output voltage "video identified" and colour signal available with $f_{sc} = 4.4\text{ MHz}$ or no colour signal detected</td><td>8V</td></tr></table> <p>The maximum load current on this pin is 25μA. The output impedance is 20 KΩ.</p> | Output voltage "video not identified" | 0.5 V max | Output voltage "video identified" and colour signal available with $f_{sc} = 3.5\text{ MHz}$ | 6V | Output voltage "video identified" and colour signal available with $f_{sc} = 4.4\text{ MHz}$ or no colour signal detected | 8V |
| Output voltage "video not identified" | 0.5 V max | | | | | | | |
| Output voltage "video identified" and colour signal available with $f_{sc} = 3.5\text{ MHz}$ | 6V | | | | | | | |
| Output voltage "video identified" and colour signal available with $f_{sc} = 4.4\text{ MHz}$ or no colour signal detected | 8V | | | | | | | |
| 5 | SIF input +Volume control | <p>The sound input impedance is 8.5kΩ/5pF which has to be taken into account for the ceramic filters. For DC, the impedance is very high. The PLL is sensitive for high freq. AC signal > 1mVrms. Because of the chosen principle: an adjustment free PLL it is needed to have an internal PLL with a large bandwidth (catching range). This implies system also is sensitive for spurious frequencies. Both layout and sound band pass filters need special attention.</p> <p>The volume can be controlled at this pin by means of a DC voltage of 0.2-5V for min-max gain.</p> | | | | | | |
| 6 | External Audio Input | <p>External sound signals from scart, for example, can be applied to this pin via a capacitor. The input impedance is 25kΩ.</p> | | | | | | |
| 7 | IF Video Output | <p>A multistandard concept requires several filters at the video output (sound-trap and sound-band pass filters). This causes a too big capacitive load at the video output so an EMITTER FOLLOWER as buffer should be added.</p> <p>The required emitter current depends on the number of filters applied.</p> | | | | | | |
| 8 | Decoupling digital Supply | Decoupling Digital Supply | | | | | | |
| 9 | Ground | Ground 1 (IF, H sync, RGB output, Digital, H output) | | | | | | |
| 10 | Positive Supply (8V) | Supply (IF, Sound, H sync, Chroma, Filters, RGB output, Digital) | | | | | | |
| 11 | Ground | Ground 2 (Sound, Chroma, Filters, Hosc, PHI-1, PHI-2) | | | | | | |

| Pin No. | Name | Function Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------|---------------------------------------|--|--------------|-----------------|-----------------|--------------|-----------------|--------------|-------|--------|----|-----|-----|----|----------|----|-----------------|-----|-------|----|-----|----------|-------|--------|-----|-----------|-----|----|----------|----|
| 12 | Decoupling filter tuning | Variations in the tuning voltage outside calibration (i.e. during field scan), due to external leakage current or interference sources, will result in mistuning of the luminance notch filter, chroma bandpass filter and luminance delay stage. Unwanted voltage signals at pin 12 due to external leakage currents or crosstalk from interference sources should be less than 100mV. A capacitor of 100nF requires that external leakage currents at pin 12 should be less than 0.5μA. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | Internal CVS input | The internal and external CVBS amplitudes should be 2V _{pk-pk} and 1V _{pk-pk} respectively; their source impedances should be low so as to minimize crosstalk from interference sources. The internal CVBS input is derived from the IF video output (pin 7) and the external CVBS input can be derived from either SCART CVBS or YSVHS; they should be AC coupled to pins 13 & 15 respectively. The coupling capacitors are chosen in order to have fast clamping and minimum line/field sag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | External CVS input | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | Peaking control input | The input impedance of pin 14 is very high (MOS input). The DC voltage at the peaking control input controls the gain of the peaking amplifier. The peaking control input voltage should have a DC voltage range from 0 to 5V. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | AV switch input + Chroma (SVHS) input | <p>The input impedance of the chroma and A/V switch input (pin 16) is 15kΩ in parallel with 5pF. A DC voltage on this pin controls the internal/external CVBS and AUDIO selection where the following table gives the various possibilities:</p> <table><tr><th>Vpin 16 (dc)</th><th>Internal CVBS</th><th>External CVBS/Y</th><th>CSVHS signal</th><th>Luminance notch</th><th>Audio signal</th><th>Model</th></tr><tr><td>< 0.5V</td><td>on</td><td>off</td><td>off</td><td>on</td><td>Internal</td><td>TV</td></tr><tr><td>Between 3V & 5V</td><td>off</td><td>on(Y)</td><td>on</td><td>off</td><td>External</td><td>S VHS</td></tr><tr><td>> 7.5V</td><td>off</td><td>on (CVBS)</td><td>off</td><td>on</td><td>External</td><td>AV</td></tr></table> | Vpin 16 (dc) | Internal CVBS | External CVBS/Y | CSVHS signal | Luminance notch | Audio signal | Model | < 0.5V | on | off | off | on | Internal | TV | Between 3V & 5V | off | on(Y) | on | off | External | S VHS | > 7.5V | off | on (CVBS) | off | on | External | AV |
| Vpin 16 (dc) | Internal CVBS | External CVBS/Y | CSVHS signal | Luminance notch | Audio signal | Model | | | | | | | | | | | | | | | | | | | | | | | | |
| < 0.5V | on | off | off | on | Internal | TV | | | | | | | | | | | | | | | | | | | | | | | | |
| Between 3V & 5V | off | on(Y) | on | off | External | S VHS | | | | | | | | | | | | | | | | | | | | | | | | |
| > 7.5V | off | on (CVBS) | off | on | External | AV | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | Brightness Control input | The brightness control voltage present at pin 17 controls the dc level of the RGB outputs where a brightness control voltage of 0 → 5V at pin 17 results in a black level shift at the RGB outputs of ±1V about the nominal. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 19 20 | B-output G-output R-output | <p>The RGB output signals are supplied to the video output stages. For nominal input signals (i.e. CVBS and-(R-Y)/-(B-Y) signals) and for nominal gain settings then the RGB output signal amplitudes (black-to-white) are typically 4V with a black level at approximately 1.3V. The blanking level is 0.8V and maximum peak white level is 6.0V. Since the RGB output stages are made with emitter followers, the maximum sink current is limited to 1.5mA. Therefore the current delivered from the video output stages to the RGB pins must not exceed 1.5mA.</p> <p>When the RGB switch control (pin 21) voltage exceeds 4V then the RGB outputs are blanked and consequently on-screen display signals (OSD) can be supplied to the video output stages.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Pin No. | Name | Function Description |
|----------------|---|--|
| 21 | RGB insertion + Blanking input | The RGB insertion signals are selected by means of a fast switch control. With the conditions that: $0.8V < V_{pin21} < 3.1V$ then the RGB insertion signals are selected. And input voltage to blank the RGB-outputs so that OSD signals can be applied to these outputs is 4.5V (min). |
| 22 23 24 | R-input for insertion G-input for insertion B-input for insertion | The RGB insertion signal information is coupled via 100nF to pins 22, 23 and 24 respectively. The coupling/clamping capacitors should always have a low impedance path to ground for proper clamping operation. |
| 25 | Contrast Control Input | The contrast control input of $0 \rightarrow 5V$ at pin 25 gives a 20dB gain range at the RGB outputs. When one of the RGB output signals exceed 6V, it is then clipped to 6V and also the gain of the RGB output amplifiers can be reduced by adapting the contrast voltage using the peak white limiter (PWL) current. The PWL current during PWL operation is 100 μ A. |
| 26 | Saturation Control Input | The saturation control input voltage, present at pin 26, is $0 \rightarrow 5V$. this corresponds to a 52dB gain range of the $-(R-Y)/(B-Y)$ signals. |
| 27 | Chroma output + Hue Control Input | If the $V_{pin27} > 6V$, the ASM does not search for NTSC signals and the decoder application can only be PAL or PAL/SECAM. The output impedance with an external resistance of 22k Ω to 8V is then approximately 500 Ω . The hue control input pin should be provided with a voltage of 0 to 5V for NTSC decoder applications; within this voltage range the input impedance is very high (MOS input). |
| 28 29 | B-Y input R-Y input | The $-(R-Y)/(B-Y)$ signals, present at pins 11 and 12 of the TDA4661, are coupled via 100nF (these capacitors are also clamping capacitors) to pins 29 and 28. The maximum input current of both pins is 1 μ A. With 100nF coupling capacitors the voltage drop over a line period is less than 0.5mV. Since the output impedance of pin 11 and 12 of the TDA 4661 is maximal 400 Ω then the signal tracks between the TDA4461 and the TDA8362 should have good ground shielding and be as short as possible. |
| 30 31 | R-Y output B-Y output | The output impedance of pins 30 & 31 is approximately 250 Ω when PAL/NTSC signals are identified. For SECAM signals the output impedance is very high (output switch is open) and any external circuitry is not loaded (i.e. the demodulator outputs of the TDA8395). During the line/field blanking periods of the sandcastle pulse, the demodulator outputs are set to the correct dc levels so as no offsets exist. The $-(R-Y)/(B-Y)$ outputs are coupled, via 1nF, to pins 16 & 14 of the TDA4661 respectively. |
| 32 | 4.43 MHz output for TDA8395 | A SECAM reference signal (4.43 MHz only) is delivered directly from pin 32 of the TDA8362 to pin 1 of the TDA8395. When SECAM signals are identified by the TDA8395, it withdraws a current of 150 μ A from pin 32. The SECAM interface communicates the ident information via this current to the ASM. If PAL/NTSC signals are not already identified by the ASM and the identified signal is 50 Hz then an acknowledge will be given by the ASM to the TDA8395 by setting the voltage at pin 32 to 5V. With SECAM identified, the SECAM reference signal is gated and present at pin 32 only during the field retrace period. When PAL/NTSC is identified, the output level is 1.5V. |

| Pin No. | Name | Function Description |
|----------|--|---|
| 33 | Loop Filter (Burst Phase Detector) | <p>One of the important aspects of the PLL is the loop filter connected to pin 33. It ensures that the PLL synchronizes the VCXO, in both frequency and phase, with the incoming burst (average burst for PAL standards). It also determines the dynamic performance of the loop where the important parameters are:</p> <ul style="list-style-type: none"> – Noise immunity – Transient response – Acquisition behaviour <p>The remaining aspects of the PLL/VCXO are static phase error and X-tal type used at pins 34 or 35. For small static phase errors (less than 5°) the requirements are:</p> <ul style="list-style-type: none"> – The combined burst phase detector and VCXO sensitivity are high – The offset of the burst phase detector output is small – The external leakage current at pin 33 is small <p>The TDA8362 determines the first two; the third is determined by the external leakage resistance of pin 33 to ground. Deviations in the VCXO free running frequency due to X-tal or X-tal load capacitance spreads have negligible influence on the static phase error because the combined phase detector and VCXO sensitivity is high. The static phase error is due to the internal offset of the phase detector output and the external leakage current at pin 33. Static phase errors much less than 5° were measured.</p> |
| 34 35 | 3.58MHz X-TAL Connection 4.43MHz X-TAL Connection | To ensure correct operation of both colour processing and sync calibration circuits in the TDA8362, 4.43 X-tals must not be connected to pin 34 and 3.58 X-tals must not be connected to pin 35. |
| 36 | Start Horizontal Oscillator | <p>The minimum current required for the start function is 6.5mA, then the voltage will be approx. >7.2V. The voltage at pin 36 may not exceed 8.8V, so depending on the application external clamping is necessary.</p> <p>If the start voltage is below approximately 5.8V then the horizontal output will be disabled.</p> <p>The decoupling should be sufficient because the start pin supplies the circuitries needed for the horizontal output. (The oscillator references however, are supplied by the bandgap)</p> <p>This pin must be connected directly to the supply pin when no start function is used.</p> |
| 37 | Horizontal Output | This open collector output drives the horizontal output stage. The maximum allowable current is 10mA. The saturation voltage then will be 0.3V. |
| 38 | Flyback input +Sandcastle Output | <p>A sandcastle signal is available at this pin for external use. The signal levels are:</p> <ul style="list-style-type: none"> Burst typ 5.3V, the output impedance is approx. 1k2Ω Flyback typ 3 V, impedance defined by the flyback circuit. Field blanking typ 2 V, the output impedance is approx. 4kΩ <p>The flyback input signal is used for the PHI-2 loop and RGB line blanking. Pin 38 requires a current of only a few µA in order to reach the 3V flyback clamping level. Detection of the flyback pulse (and thus RGB blanking) only occurs when the input current is at least 100µA. (The maximum allowable current is 300µA.)</p> <p>Additional remarks:</p> <ul style="list-style-type: none"> – Due to an internal base current at pin 38, the voltage level becomes 3V when the pin is not loaded. – During start-up pin 38 is forced low by 2mA. |

| Pin No. | Name | Function Description |
|---------|---|--|
| 39 | ϕ -2 loop Filter + X-Ray Protection | The phase error on screen due to storage time variations depends on the PHI-2 loopgain. In principle this figure is fixed but will decrease when an additional resistor comes in parallel to the capacitor at pin 39. The time constant is defined by the external capacitor. The voltage to switch on the X-ray protection is 6V. (min.) |
| 40 | ϕ -1 loop Filter | The PHI-1 behaviour depends on both the loop filter externally connected at pin 40 and the PHI-1 output currents. The PHI-1 output current has been made switchable during scan (a fixed current ratio) in order to avoid the need of switching the loop filter for normal-and noisy-signals. This implies the loop filter can be optimised for both VCR-and noisy-signals. |
| 41 | Vertical Feedback Input | The feedback signal is derived by sensing the deflection coil current by means of a resistor. The feedback signal is related to the vertical ramp signal. The ramp amplitude should be 1Vpp while the DC level is 2.5V typical. The guard levels are 1 and 4Vtyp. In order to filter horizontal into a capacitor is mounted at the input. |
| 42 | Vertical Ramp Generator | The vertical ramp is defined as: <ul style="list-style-type: none"> - DC clamping voltage of 2V - AC amplitude of 1.5Vpp for a 50Hz field signal - AC amplitude of 1.25Vpp for a 60Hz field signal The AC amplitude of 1.5V is important for optimal pre-correction and 50/60Hz gain correction. |
| 43 | Vertical Output | The vertical drive output is fed to the deflection-IC. The available output current is minimal 1mA, and the available output voltage is 4-5V. During retrace the drive output has to be constant and equal to the low level of 0.3V. |
| 44 | AFC Output | The AFC steepness can be influenced by the Q of the tuned circuit and output resistors at the AFC output pin (60k Ω output impedance internally). Due to current reserve the steepness can be reduced by a factor 4-5 while the output voltage swing remains 6V. Some small video information can still be present at the AFC output pin although a S&H function is applied. This video information can be filtered by an external capacitor at this pin. The AFC output voltage changes from approximately 0.5-6.3V. The output impedance of AFC circuit is 50k Ω . |
| 45,46 | IF Input | DC coupling is allowed, so no series capacitors are necessary. The circuit matches the required load impedance for commonly used SAW filters (2k/3pF). |
| 47 | Tuner AGC Output | The tuner AGC is an open collector output which is acting as a variable current source to ground. Normally the output application circuit is designed for an output current swing of 1-2mA. In order to improve the dynamical behaviour during channel switching it is possible to sink with a current of approximately 12mA maximal. The max voltage is Vcc+1V. |
| 48 | AGC Decoupling Capacitor | Increasing of the AGC time constant is achieved by increasing the AGC capacitor on pin 48. Increasing this capacitor also results in an improvement in the catching and holding range of the ident circuit. |

| Pin No. | Name | Function Description |
|---------|------------------------------|---|
| 49 | Tuner Take-Over Adjustment | <p>The control range at this pin is 0.5-4.5V.</p> <p>Characteristics: The tuner take over adjust voltage versus IF input signal is a linear function with a slope of approximately 20mV/dB. (Measured at an AGC output current of 1mA) In order to achieve a stable AGC control at strong signals a decoupling capacitor of at least 1nF at this pin is required.</p> <p>Alignment: With the potentiometer connected to pin 49 of the TDA8362, the tuner take over point can be adjusted when an RF signal is applied to the aerial input of the tuner.</p> |
| 50 | Audio Input | <p>The DC output voltage is 3.3V.</p> <p>The volume controlled output signal is AC coupled to the sound output amplifier. The output impedance is 250Ω.</p> |
| 51 | Decoupling Sound Demodulator | <p>This pin defines the DC voltage at the deemphasis and sound output. The pin forms a low pass filter in the DC feedback loop. This implies that the sound amplitude for lower frequencies, < f_k, is attenuated. A bigger capacitor, in order to decrease f_k, is allowed but increases the DC setting time.</p> |
| 52 | Decoupling Bandgap Supply | Decoupling Bandgap Supply |

TDA4661 (Base Band Delay Line)

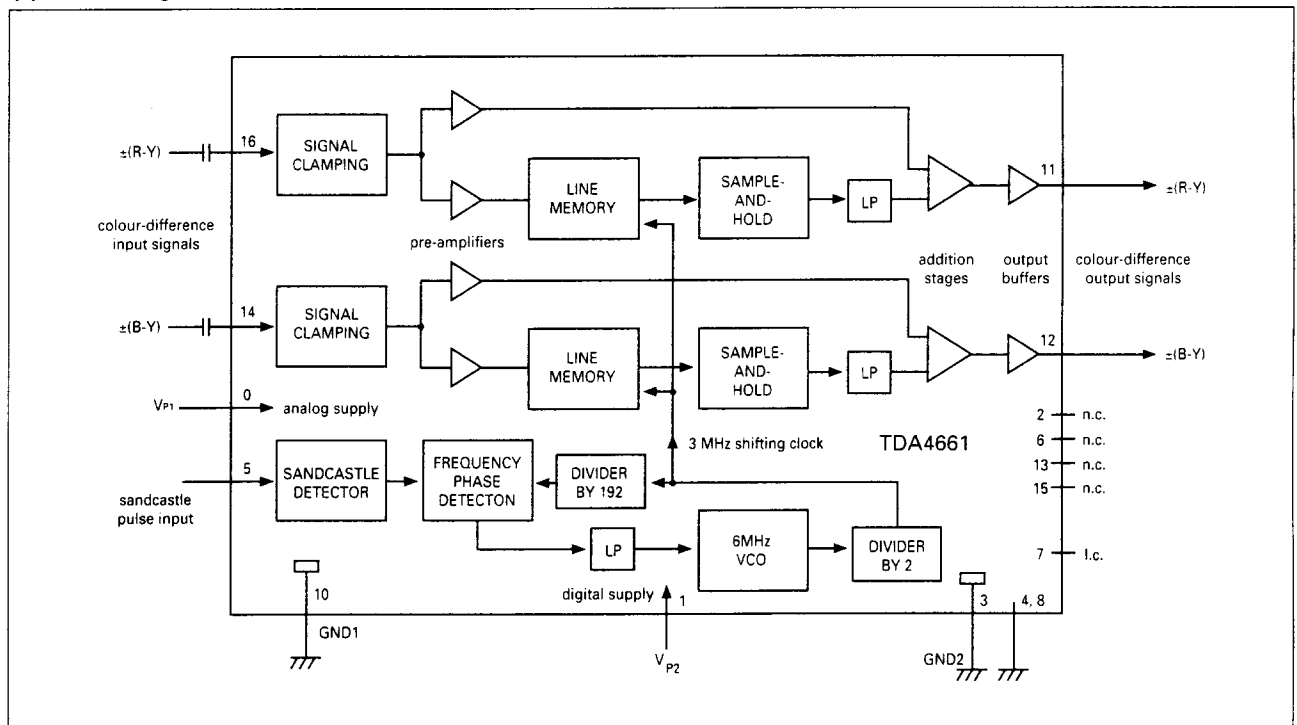
(1) Features

- Two comb filters, using the switched-capacitor technique, for one line delay time (64 μ s)
- Adjustment free application
- No crosstalk between SECAM colour carriers (diaphoty)
- Handles negative or positive colour-difference input signals
- Clamping of AC-coupled input signals ($\pm(R-Y)$ and $\pm(B-Y)$)
- VCO without external components
- 3MHz internal clock signal derived from a 6MHz VCO, line-locked by the sandcastle pulse (64 μ s line)
- Sample-and-hold circuits and low-pass filters to suppress the 3 MHz clock signal
- Addition of delayed and non-delayed output signals
- Output buffer amplifiers
- Comb filtering functions for NTSC colour-difference signals to suppress cross-colour

(2) General Description

The TDA4661 is an integrated baseband delay line circuit with one line delay. It is suitable for decoders with colour-difference signal outputs $\pm(R-Y)$ and $\pm(B-Y)$.

(3) Block Diagram



(4) Pin Description

| SYMBOL | PIN | DESCRIPTION |
|-----------------|-----|-------------------------------------|
| V _{p2} | 1 | +5V Supply Voltage for Digital Part |
| n.c. | 2 | Not Connected |
| GND 2 | 3 | Ground for Digital Part (0 V) |
| i.c. | 4 | Internally Connected |
| SAND | 5 | Sandcastle Pulse Input |
| n.c. | 6 | Not Connected |
| i.c. | 7 | Internally Connected |
| i.c. | 8 | Internally Connected |

| SYMBOL | PIN | DESCRIPTION |
|----------------------|-----|------------------------------------|
| V _{p1} | 9 | +5V Supply Voltage for Analog Part |
| GND 1 | 10 | Ground for Analog Part (0 V) |
| V ₀ (R-Y) | 11 | \pm (R-Y) Output Signal |
| V ₀ (B-Y) | 12 | \pm (B-Y) Output Signal |
| n.c. | 13 | Not Connected |
| v ₁ (B-Y) | 14 | \pm (B-Y) Input Signal |
| n.c. | 15 | Not Connected |
| V ₁ (R-Y) | 16 | \pm (R-Y) Input Signal |

TDA8395 (Secam Decoder)

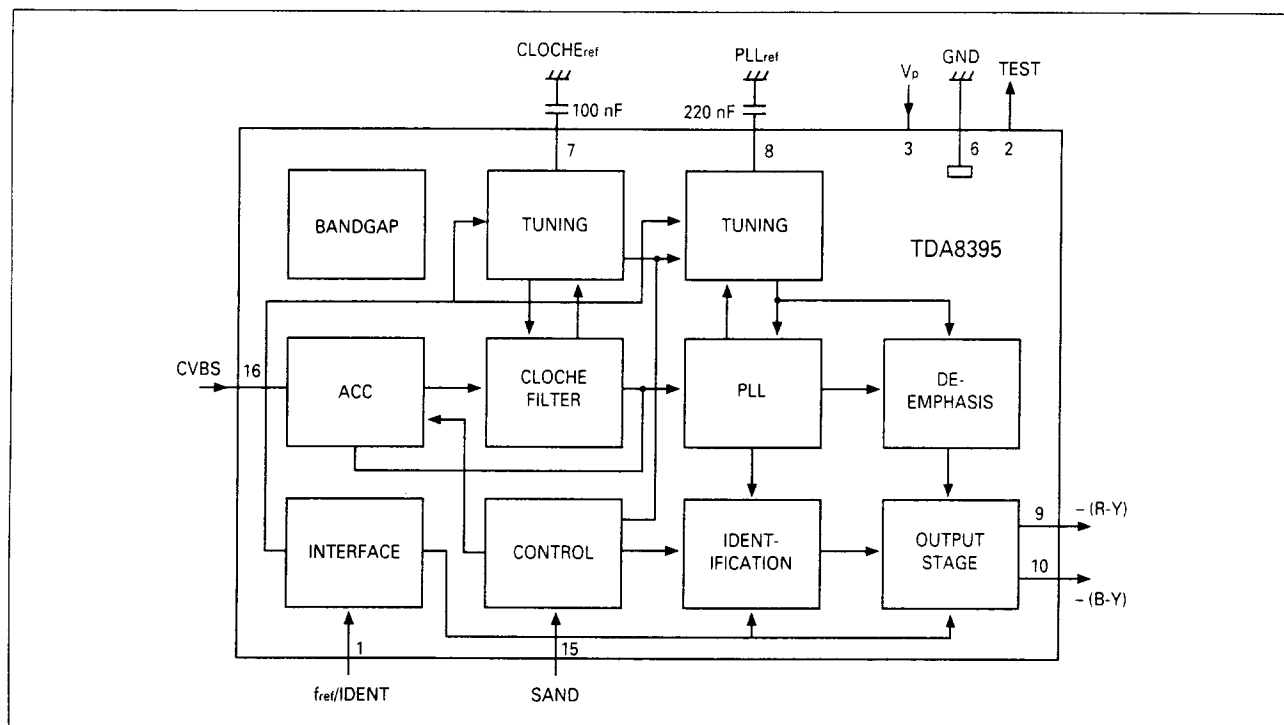
(1) Features

- Fully integrated filters
- Alignment free
- For use with baseband delay

(2) Description

The TDA8395 is a self-calibrating, fully integrated SECAM decoder. The IC should preferably be used in conjunction with the PAL/NTSC decoder TDA8362 and with the switch capacitor baseband delay circuit TDA4661. The IC incorporates HF and LF filters, a demodulator and an identification circuit (luminance is not processed in this IC). A highly stable reference frequency is required for calibration and a two-level sandcastle pulse for blanking and burst gating.

(3) Block Diagram



(4) Pin Description

| SYMBOL | PIN | DESCRIPTION |
|----------------|-----|--|
| $f_{p1}/IDENT$ | 1 | Reference Frequency Input/Identification Input |
| TEST | 2 | Test Output |
| V_p | 3 | Positive Supply Voltage |
| n.c. | 4 | Not Connected |
| n.c. | 5 | Not Connected |
| GND | 6 | Ground |
| $CLOCHE_{ref}$ | 7 | Cloche Reference Filter |
| PLL_{ref} | 8 | PLL Reference |
| -(R-Y) | 9 | -(R-Y) Output |
| -(B-Y) | 10 | -(B-Y) Output |
| n.c. | 11 | Not Connected |
| n.c. | 12 | Not Connected |
| n.c. | 13 | Not Connected |
| n.c. | 14 | Not Connected |
| SAND | 15 | Sandcastle Pulse Input |
| CVBS | 16 | Video (chrominance) Input |

TDA7263M (12+12W Stereo Amplifier with Muting)

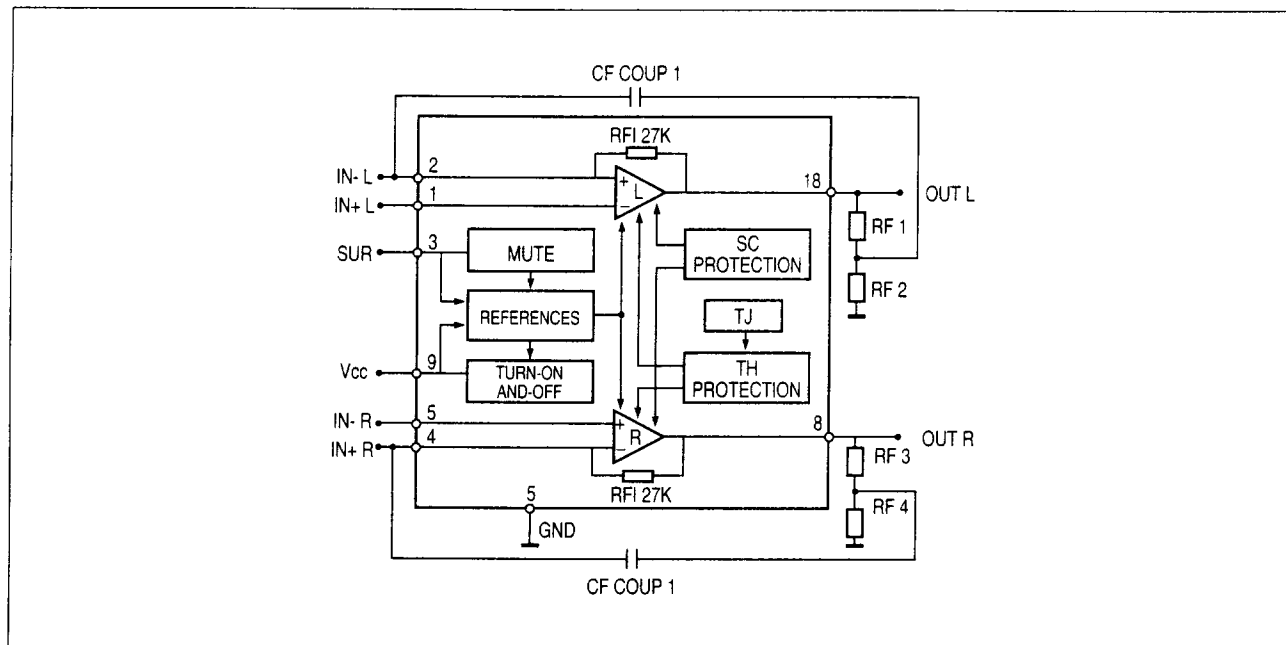
(1) Features

- Wide supply voltage range
- High output power
- Mute facility with low consumption
- Ac short circuit protection
- Thermal overload protection

(2) General Description

The TDA7263M is class AB dual audio Power amplifier assembled in the multi watt package, specially designed for high auality sound application as Hi-Fi music centers and stereo TV sets.

(3) Block Diagram



(4) Pin Description

| PIN | DESCRIPTION |
|-----|-----------------------|
| 1 | Non Inverting Input 1 |
| 2 | Inverting Input 1 |
| 3 | Sur/Muting |
| 4 | Inverting Input 2 |
| 5 | Non Inverting Input 2 |
| 6 | GND |
| 7 | N.C. |
| 8 | Output 2 |
| 9 | Vcc |
| 10 | Output 1 |
| 11 | N.C. |

AT24C08PC (EEPROM)

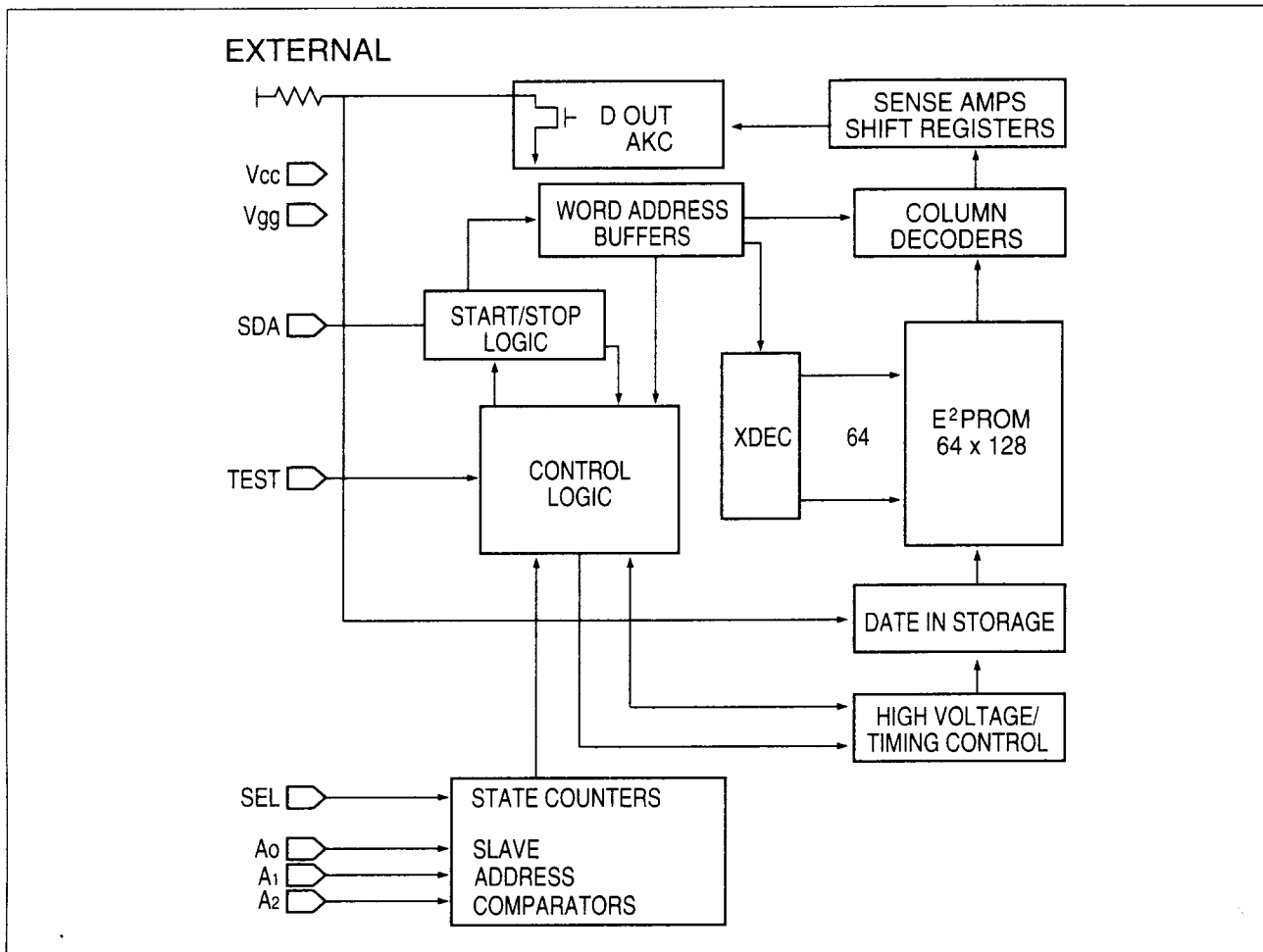
(1) Features

- IC Bus compatible
- Low power CMOS Technology
- 16 Byte page write Buffer
- Self-Timed write cycle with Auto-Clear
- 100,000 program/Erase cycles
- 100 Year Data Retention
- Optional High Endurance Device Available

(2) General Description

The AT24C089C is a 8K bit serial CMOS E²PROM internally organized as 1024x8bits. Catalyst's advanced C MOS technology substantially reduces device power requirements. The AT24C08PC features a 16 byte page write buffer.

(3) Block Diagram



(4) Pin Description

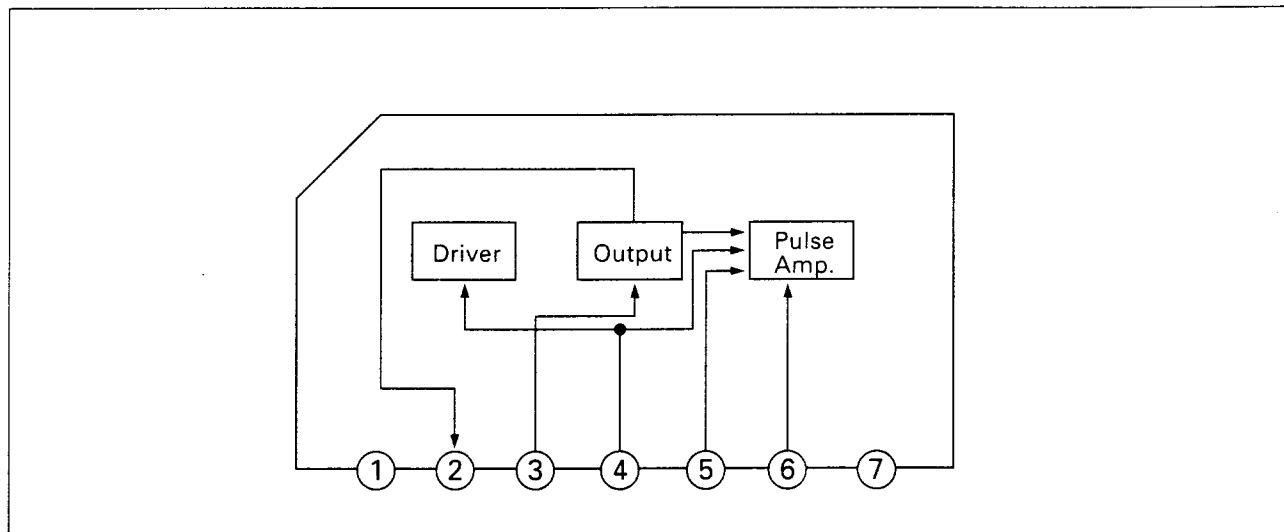
| PIN | SYMBOL | DESCRIPTION |
|-----|------------|-----------------------|
| 1-3 | A0, A1, A2 | Device Address Inputs |
| 4 | Vss | Ground |
| 5 | SDA | Serial Data/Address |
| 6 | SCL | Serial Clock |
| 7 | TEST | Connect to Vss |
| 8 | Vcc | +5V Power supply |

AN5515 (DBL2004) (TV Vertical Deflection Output Circuit)

(1) Features

- Low power consumption, direct deflection coil driving capability (Flyback voltage two times as high as supply voltage is supplied during flyback period only)

(2) Block Diagram



(3) Pin Description

| PIN No. | Pin Name |
|---------|---------------------------|
| 1 | GND |
| 2 | Output |
| 3 | Supply Voltage for Output |
| 4 | Input |
| 5 | Trigger Pulse Input |
| 6 | Pulse Amp. Output |
| 7 | Vcc |

PCA84C122A (IC REMOCON)

(1) Features

- ROM, RAM and I/O is device dependent
- Two test inputs T0, T1
- 3 Single-level vectored interrupt sources
- 8 bit programmable timer/counter with 5-bit pre-scaler
- Single supply voltage from 2.0V to 5.5V
- On-board oscillator 1MHz to 5MHz
- Operating temperature range -20 to +50°C

(2) General Description

The PCA84C122AT is a stand-alone micro controller designed for use in remote control transmitters for a wide range of applications.

(3) Pin Description

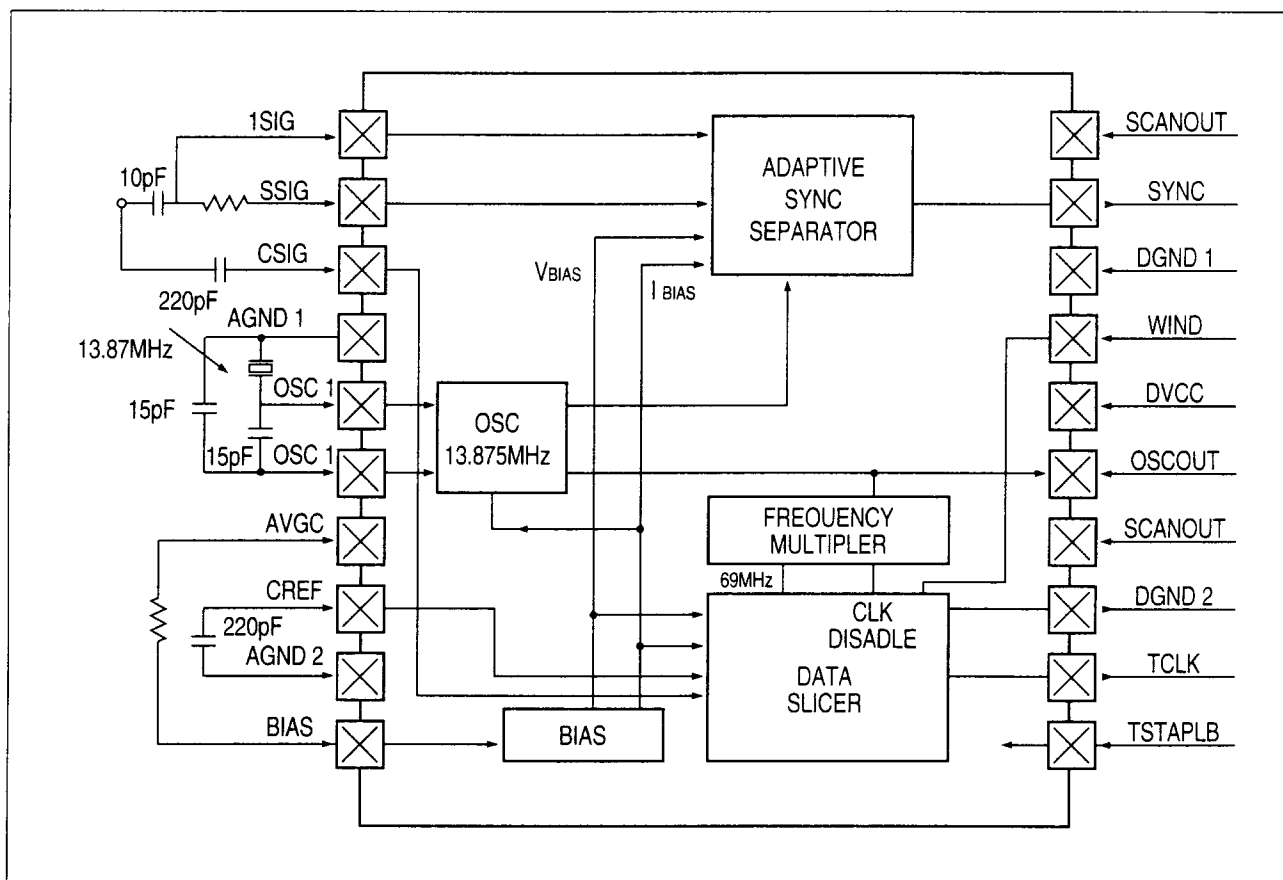
| PIN | SIGNAL | DESCRIPTION |
|-----|--------|---|
| 3 | P00 | Standard I/O Port lines, generally used for keypad scanning |
| 2 | P01 | |
| 23 | P02 | |
| 22 | P03 | |
| 10 | P04 | |
| 11 | P05 | |
| 14 | P06 | |
| 15 | P07 | Standard I/O Port lines, generally used for keypad scanning |
| 19 | P10 | |
| 18 | P11 | |
| 17 | P12 | |
| 16 | P13 | |
| 1 | P14 | |
| 24 | P15 | |
| 12 | P16 | Test T0 and external interrupt input |
| 13 | P17 | |
| 4 | TP/INT | Test T0 and external interrupt input |
| 5 | T1 | Test T1 |
| 6 | RESET | Active HIGH reset, normally tied to Vss because internal Power-on reset can serve the same function |
| 8 | XTAL 1 | Crystal or ceramic resonator |
| 9 | XTAL 2 | |
| 21 | OUT | Pulse train output pin, capable of sinking 27mA |
| 7 | Vdd | Power supply |
| 20 | Vss | Ground |

CF72306

(1) Features

- Forms a custom 2-chip solution when used with an ASIC TEXT decoder
- Low power 1 μ m CMOS
- Standard 20 pin/300mH package
- Tolerates a range of video distortions
- Operates with 13.875MHz fundamental mode crystal

(2) Block Diagram



(3) Pin Description

| PIN | SIGNAL | DESCRIPTION |
|-----|--------|----------------------------|
| 1 | TSIG | Video Sync Input 1 |
| 2 | SSIG | Video Sync Input 2 |
| 3 | CSIG | Video Data Input |
| 4 | AGND1 | Analogue Ground |
| 5 | OSC1 | 13.875MHz Oscillator |
| 6 | OSC2 | 13.875MHz Oscillator |
| 7 | AVCC | Analogue Vcc |
| 8 | CREF | Video Data Reference Input |
| 9 | AGND2 | Analogue Ground |
| 10 | BIAS | Internal Reference |

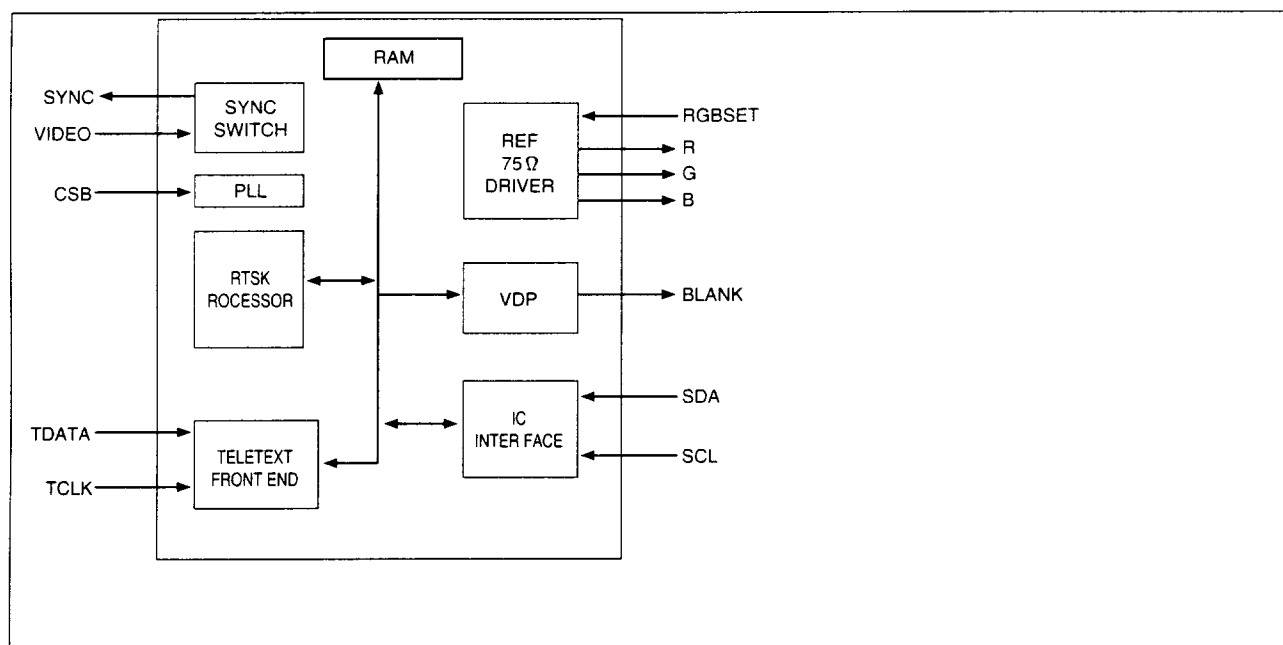
| PIN | SIGNAL | DESCRIPTION |
|-----|---------|-----------------------|
| 11 | TSTAPLB | Test/Application |
| 12 | TCLK | Teletext Clock |
| 13 | TDATA | Teletext Data |
| 14 | DGND2 | Digital Ground |
| 15 | OSCOUT | Oscillator Output |
| 16 | DVCC | Digital Vcc |
| 17 | WIND | Timing Signal |
| 18 | DGND1 | Digital Ground |
| 19 | SYNC | Separated Sync Output |
| 20 | SCANOUT | Test Scan Output |

CF70200 (Teletext Decoders)

(1) Features

- Eight pages of one-chip Display RAM
- Europe-wide solution
- Automatic FLOF & TOP decoding
- Flicker-free packet 26 processing one chip
- Program delivery control
- Minimum software requirement
- Menu page capability
- Instantaneous page memory clear
- 75Ω RGB outputs
- Digital PLL
- Upgrade path from UNITEXT

(2) Block Diagram



(3) Pin Description

| pin | PIN NAME | DESCRIPTION |
|-----|----------|---------------------------------------|
| 1 | TEST 5 | Test PIN |
| 2 | SYNC | The output of an internal sync switch |
| 3 | CVBS | Video input to sync switch |
| 4 | DVcc | +5V |
| 5 | RSTB | System reset active low |
| 6 | CLINK | System clock 13.875Mhz |
| 7 | DGND | Ground |
| 8 | T1 | TEST PIN |
| 9 | T4 | TEST PIN |
| 10 | TDATA | TELETEXT DATA |
| 11 | TCLK | TELETEXT CLOCK SIGNAL |
| 12 | CSB | COMPOSITE SYNC INPUT |
| 13 | MUTE | MUTE |
| 14 | T2 | TEST PIN |

| PIN | PIN NAME | DESCRIPTION |
|-----|----------|--------------------------------------|
| 15 | WIND | WIND |
| 16 | T3 | TEST PIN |
| 17 | SCL | IIC CLOCK LINE |
| 18 | SDA | IIC DATA LINE |
| 19 | BLK | BLANKING |
| 20 | B | DISPLAY DATA |
| 21 | AVCC | +5V |
| 22 | G | DISPLAY DATA |
| 23 | R | DISPLAY DATA |
| 24 | AGND | GROUND |
| 25 | RGBSET | Adjustment for the RGB, BLANK levels |
| 26 | REF | INTERNAL REFERENCE PIN |
| 27 | FLAG1 | SYSTEM INFORMATION |
| 28 | FLAG2 | SYSTEM INFORMATION |

MSP 2410 (Multistandard sound processor)

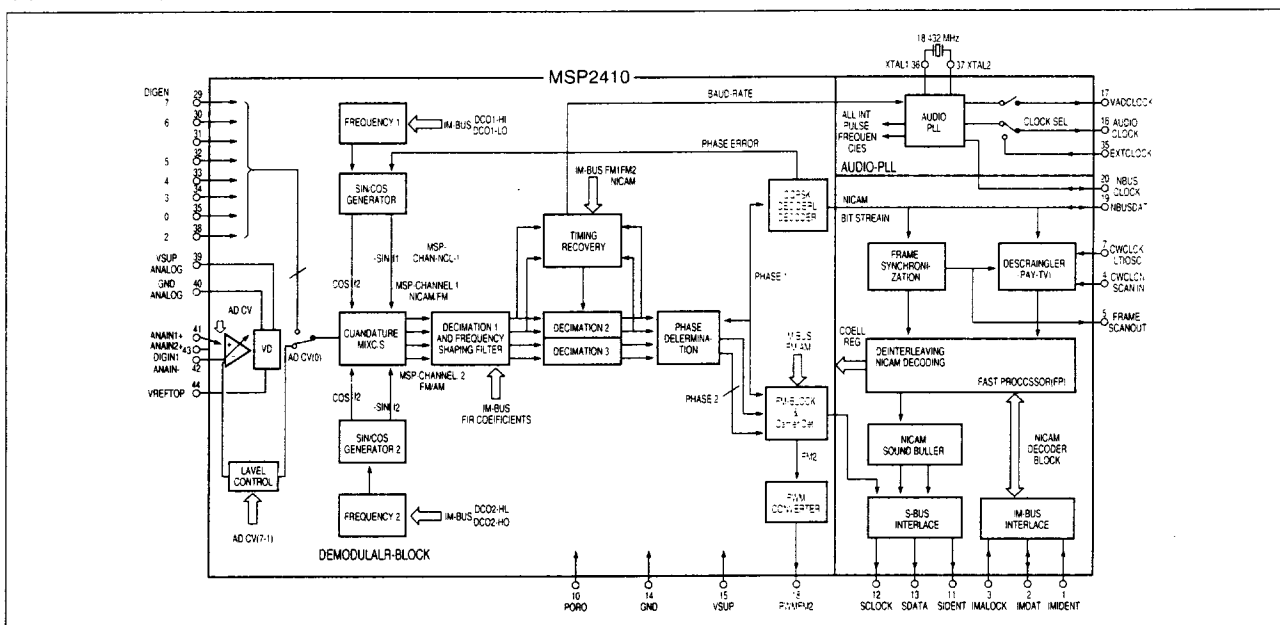
(1) Features

- Two selectable analog inputs
- Automatic Gain control for analog input
- Integrated 6 bit A/D converter
- All demodulation and filtering is performed on chip and is individually programmable

(2) General Description

The MSP2410 Multistandard sound processor is a CMOS circuit, housed in a 44-pin PLCC package. It is the successor of the MSP2400.

(3) Block Diagram



(4) PIN Description

| PIN | PIN NAME | DESCRIPTION |
|-----|----------|--|
| 1 | VREF | A/D Converter |
| 2 | ANAIN2 | Sound IF input from second audio source |
| 3 | ANAIN- | Common ground of sound-IF source 1 and 2 |
| 4 | ANAIN+ | Sound IF input from first audio source |
| 5 | AGND | Ground |
| 6 | AVCC | +5V |
| 7 | DIGIN2 | Digital Input |
| 8 | XTAL2 | Crystal Output (18.432Mhz) |
| 9 | XTAL1 | Crystal Output (18.432Mhz) |
| 10 | EXTCLK | Input for ext. clock |
| 11 | DIGIN3 | Digital Input |
| 12 | DIGIN4 | Digital Input |
| 13 | DIGIN5 | Digital Input |
| 14 | DIGIN6 | Digital Input |
| 15 | DIGIN 7 | Digital Input |
| 16 | DIOUT6 | Digital Output |
| 17 | DIOUT4 | Digital Output |
| 18 | DIOUT4 | Digital Output |
| 19 | DIOUT3 | Digital Output |
| 20 | DIOUT2 | Digital Output |

| PIN | PIN NAME | DESCRIPTION |
|-----|----------|-------------------------------------|
| 21 | DIOUT1 | Digital Output |
| 22 | DIOUT0 | Digital Output |
| 23 | NCLOCK | Clock for digital NACAM bit stream |
| 24 | NCDATA | NICAM Serial I/O |
| 25 | PWMFM | FM2 channel for FM-identification |
| 26 | VCLOCK | Clock for external A/D converter |
| 27 | ACLOCK | Main clock for AMU, APU, ADC or ACP |
| 28 | DVCC | Supply voltage |
| 29 | DGND | Ground |
| 30 | SDATA | S-BUS Data Out |
| 31 | SCLOCK | S-BUS IDENT |
| 32 | SIDENT | S-BUS IDENT |
| 33 | PORQ | Power on reset |
| 34 | RDSOUT | for test only |
| 35 | CWCLOCK | for test only |
| 36 | TESTIO | for test only |
| 37 | CWDATA | Pay-TV Data/TEst input |
| 38 | IMCLOCK | IM-BUS Clock |
| 39 | IMDATA | IM-BUS Data |
| 40 | IMIDENT | IM-BUS IDENT |

ACP2371NI (Audio Processor for Multistandard TV sets)

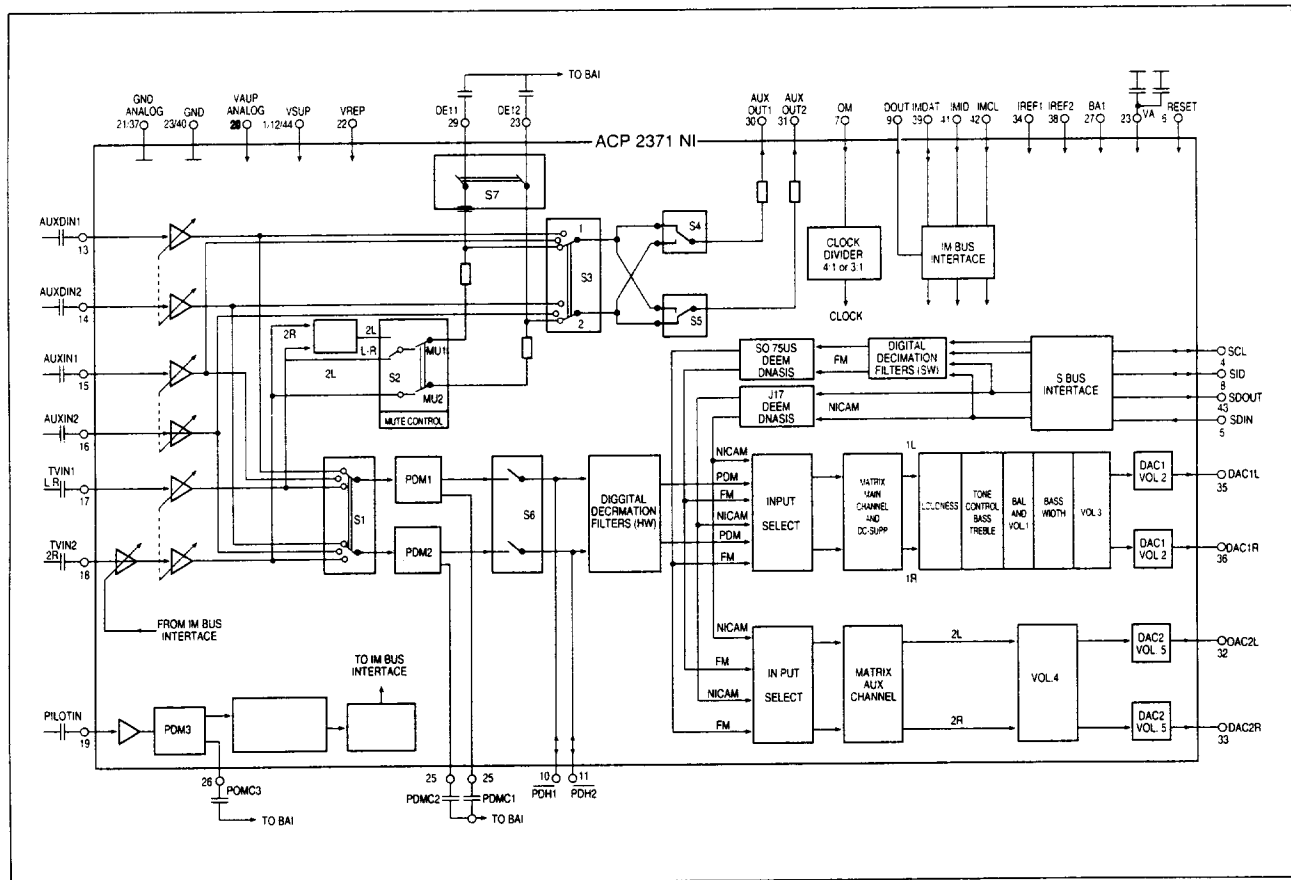
(1) Features

- Dematrixing of the digital signals
- Adjustment of volume, balance, loudness, treble, bass, base width enlargement
- Independent input selection for speaker-out and scart-out.

(2) Description

The Audio processor ACP2371NI comprises two components-an A/D converter (ADC) and an Audio processor unit (APU) implemented in CMOS and NMOS technology.

(3) Block Diagram



(4) Pin Description

| PIN | SIGNAL | DESCRIPTION |
|-----|---------------------|--|
| 1 | VRETOP | A/D-Converter: Top Reference voltage |
| 2 | ANALOGIN 2+ | Analog Input 2 |
| 3 | ANALOGIN – | Common Ground of sound-IF sources 1 and 2 |
| 4 | ANALOGIN + | Sound-IF input from first audio source |
| 5 | GNDANALOG | A/D-converter: Ground |
| 6 | VSUPANALOG | A/D-converter: Supply voltage (5V) |
| 7 | DIGIN 2 | Connect to ground when using internal A/D-converter |
| 8 | XTAL 2 | Crystal (18.432MHz) |
| 9 | XTAL 1 | Crystal (18.432 MHz) |
| 10 | EXTCLOCK | Input for ext clock to be passed through the MSP2410 |
| 11 | DIG IN 3 | Connect to ground when using internal A/D-converter |
| 12 | DIG IN 4 | Connect to ground when using internal A/D-converter |
| 13 | DIG IN 5 | Connect to ground when using internal A/D-converter |
| 14 | DIG IN 6 | Connect to ground when using internal A/D-converter |
| 15 | DIG IN 7 | Digital Input MSB |
| 16 | DIG OUT 6 | Digit output LSB |
| 17 | DIG OUT 5 | Digit output LSB |
| 18 | DIG OUT 4 | Digit output LSB |
| 19 | DIG OUT 3 | Digit output LSB |
| 20 | DIG OUT 2 | Digit output LSB |
| 21 | DIG OUT 1 | Digit output LSB |
| 22 | DIG OUT 0 | Digit output LSB |
| 23 | NBUS CLOCK | Clock of digital NICAM bit stream |
| 24 | NBUS DAT | NICAM 728 serial I/O |
| 25 | PWM FM ² | FM ² channel for FM-identification |
| 26 | VAD CLOCK | Clock for external A/D converter |
| 27 | AUDIO CLOCK | Main clock for AMU, APU, ADC or ACP |
| 28 | VSUP | Supply Voltage (digital) |
| 29 | GND | Ground (digital) |
| 30 | SDATA | S-BUS Data out |
| 31 | SCLOCK | S-BUS clock |
| 32 | SIDENT | S-BUS Ident |
| 33 | PORQ | Power on Reset |
| 34 | RDSOUT | For test only |
| 35 | CW CLK/LTIO SC | Pay-TV clock/Test Input |
| 36 | TEST IO | For test only |
| 37 | CW DATA/SCANIN | Pay-TV Data/Test input |
| 38 | IM CLOCK | IM-BUS CLOCK |
| 39 | IMDAT | IM-BUS Data |
| 40 | IMIDENT | IM-BUS Ident |

TDA4445B (Quasi Parallel Sound Processor)

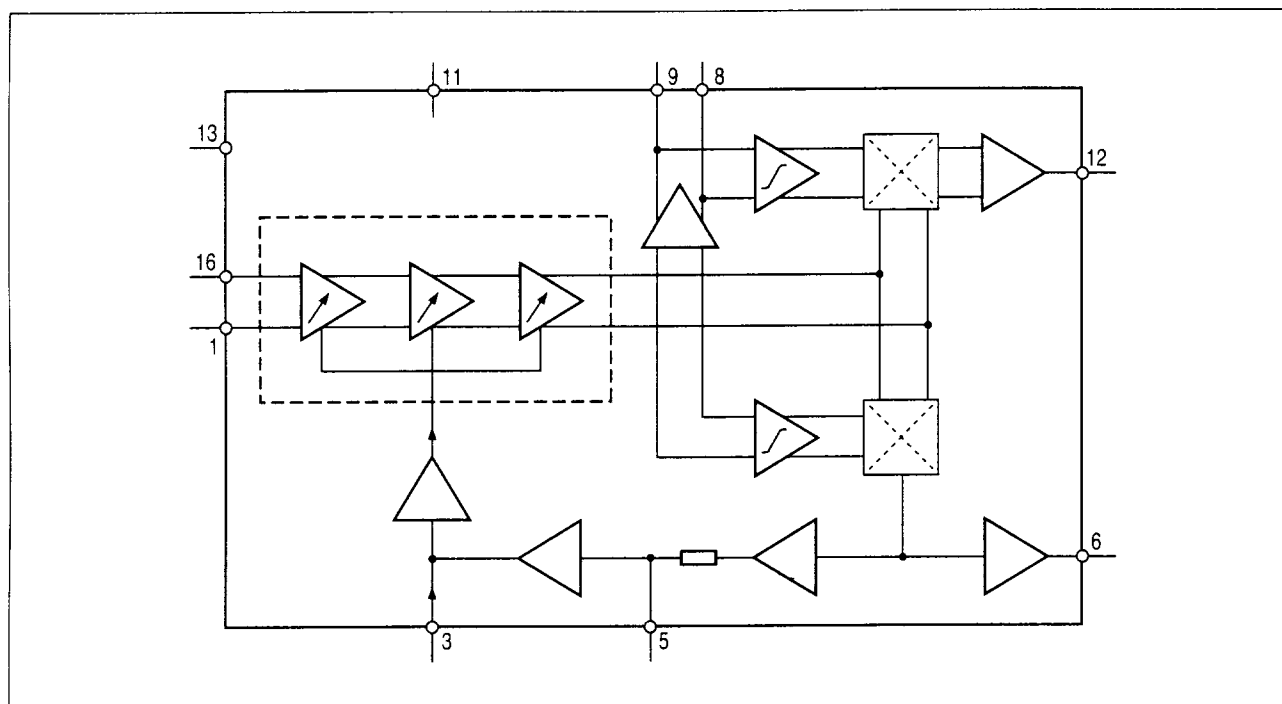
(1) Features

- Very high input sensitivity
- Excellent signal to noise ratio
- Fast averaged AGC
- IF amplifier can be switched off for VTR mode
- Output signal stabilized against supply voltage variations
- Very few external components
- Targeting bistandard applications
- Low AM distortion

(2) General Description

The TD4445B is quasi parallel sound processor with quadrature intercarrier demodulator.

(3) Block Diagram



(4) Pin Description

| PIN | DESCRIPTION |
|-------------------|----------------------|
| 1,16 | IF input |
| 3 | IF AGC time constant |
| 8, 9 | Tuned circuit |
| 11 | Supply voltage |
| 12 | Sound-IF-output |
| 13 | Ground |
| 2,4,7,10 14,15 | not be connected |
| 5 | Average capacitor |
| 6 | AF output |

KA4558 (IC NICAM Low Pass Filter)

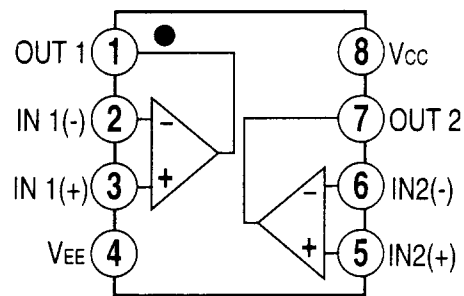
(1) Features

- No frequency compensation required.
- No latch-up
- Large common mode and differential voltage range.
- Parameter tracking over temperature range
- Gain and phase match between amplifiers
- Internally frequency compensated
- Low noise input transistors

(2) General Description

The KA4558 series is a monolithic integrated circuit designed for dual operational amplifier.

(3) Block Diagram



TDA3866 (Quasi-split Sound Processor for All Standards)

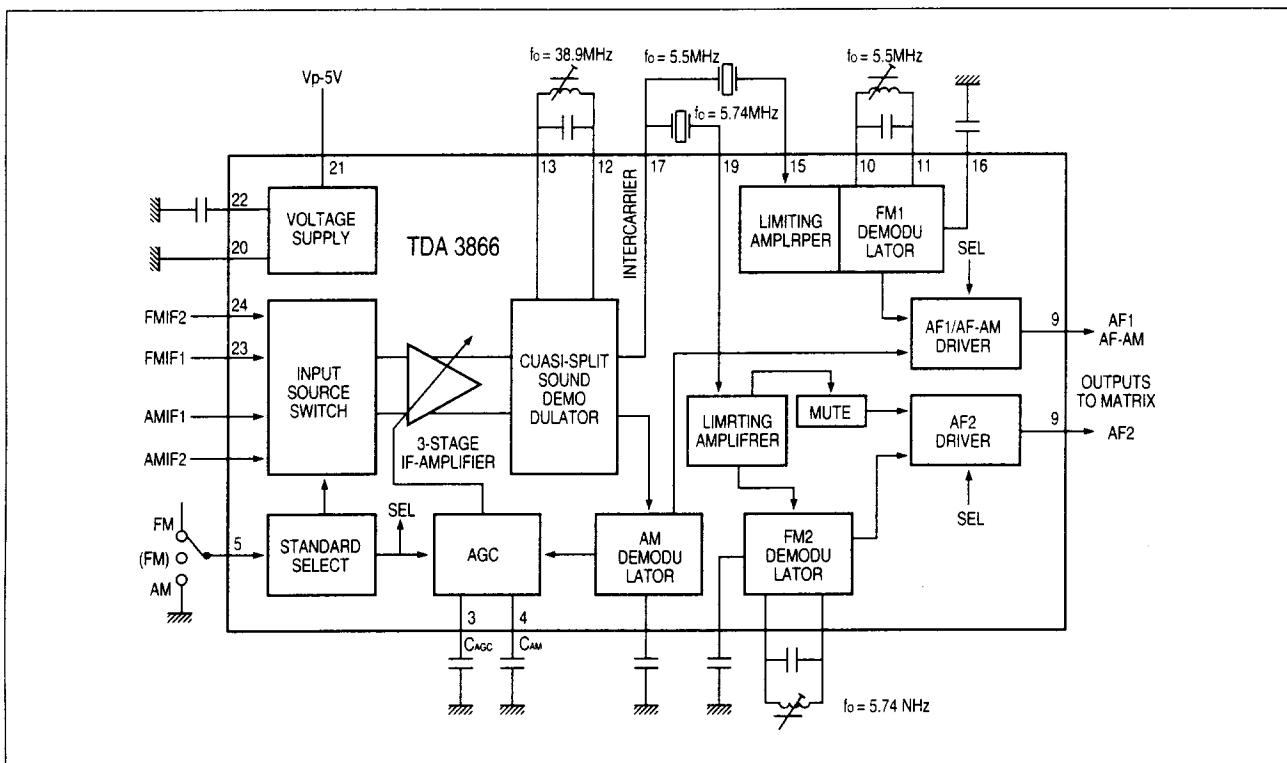
(1) Features

- Quasi-split sound processor for all standards e.g. B/G(FM sound) and L (AM sound)
- AF 2 signal automatically muted(at B/G) by the input signal level
- AM signal processing for L standard and switching over the audio signal
- Stereo-matrix correction
- Layout-compatible with TDA3858 and TDA3857
- AM output level typically 500mV at $m=0.54$

(2) General Description

Separate symmetrical IF inputs for FM or AM sound. Gain controlled wideband IF amplifier, input select switch. AGC generation due to peak sync for FM or mean signal level for AM. Reference amplifier for the regeneration of the vision carrier.

(3) Block Diagram



(4) Pin Description

| PIN | SYMBOL | DESCRIPTION |
|-----|------------------|---|
| 1 | AMIF 1 | AM IF difference input 1 for L standard (32.4 MHz) |
| 2 | AMIF 2 | AM IF difference input 2 for L standard |
| 3 | CAGC | charge capacitor for AGC (FM and AM) |
| 4 | CAM | charge capacitor for AM AGC |
| 5 | MODE | 3-state input for standard select |
| 6 | FM2R1 | reference circuit for FM2 (5.74 MHz) |
| 7 | FM2R2 | reference circuit for FM2 (5.74 MHz) |
| 8 | AF2 | AF2 output (AF out of 5.74 MHz) |
| 9 | AF1 | AF1 output (AF out of 5.5 MHz or AM) |
| 10 | FM1R1 | reference circuit for FM1 (5.5 MHz) |
| 11 | FM1R2 | reference circuit for FM1 (5.5 MHz) |
| 12 | VC-R1 | reference circuit for the vision carrier (38.9 MHz) |
| 13 | VC-R2 | reference circuit for the vision carrier (38.9 MHz) |
| 14 | CAFAM | DC-decoupling capacitor for AM demodulator (AF-AM) |
| 15 | FM11 | intercarrier input for FM1 (5.5 MHz) |
| 16 | CAF1 | DC-decoupling capacitor for FM1 demodulator (AF1) |
| 17 | ICO | intercarrier output signal (5.5/5.74 MHz) |
| 18 | CAF2 | DC-decoupling capacitor for FM2 demodulator (AF2) |
| 19 | FM21 | intercarrier input for FM2 (5.74 MHz) |
| 20 | GND | ground (0V) |
| 21 | V _p | +5 ... +8V supply voltage |
| 22 | C _{ref} | charge capacitor for reference voltage |
| 23 | FMIF1 | IF difference input 1 for B/G standard (38.9 MHz) |
| 24 | FMIF2 | IF difference input 2 for B/G standard (38.9 MHz) |

TDA6612-5 (IC Audio Processor)

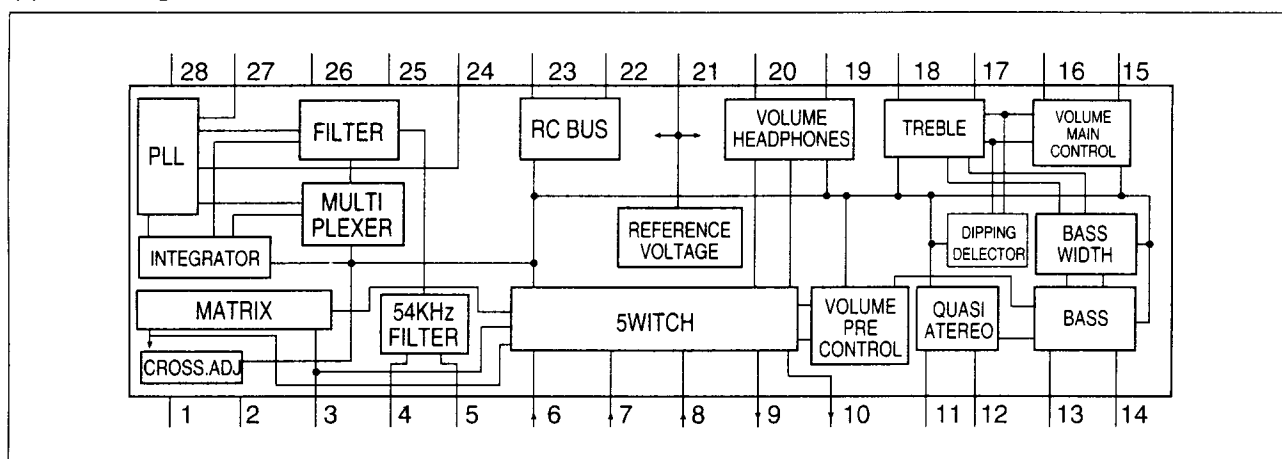
(1) Features

- All functions inclusive matrix adjustment are I²C bus controlled
- Inputs for AM sound or NICAM
- SCART interface
- Independent headphones
- Universal clock generation circuit build-in
- Clipping detector build-in
- Volume control
- High signal to noise ratio
- Extremely low total harmonic distortions

(2) General Description

The TDA6612-5 represents a complete TV stereo system controlled by the I²C bus according to German TV stereo standard.

(3) Block Diagram



(4) Pin Description

| PIN | DESCRIPTION |
|-----|--|
| 1 | AF input mono, left, sound 1 (may be balanced) |
| 2 | Bias for AF operating point |
| 3 | AF input right, sound 2 |
| 4 | 54 kHz input |
| 5 | 54 kHz filter |
| 6 | AF input (L standard) |
| 7 | AF input SCART left (sound 1) |
| 8 | AF input SCART right (sound 2) |
| 9 | AF output SCART (mono, sound 1, left) |
| 10 | AF output SCART (mono, sound 2, right) |
| 11 | Phase shifter quasistereo |
| 12 | Phase shifter quasistereo |
| 13 | Cutoff frequency bass (base width) left |
| 14 | Cutoff frequency bass (base width) right |

| PIN | DESCRIPTION |
|-----|---|
| 15 | AF output, loudspeaker right |
| 16 | AF output, loudspeaker left |
| 17 | Cutoff frequency treble left |
| 18 | Cutoff frequency treble right |
| 19 | AF output, headphones right |
| 20 | AF output, headphones left |
| 21 | +Vs (supply voltage) |
| 22 | I ² C bus SCL |
| 23 | I ² C bus SDA |
| 24 | Input H pulse (4•H pulse), crystal oscillator |
| 25 | Filter ID signal decoder |
| 26 | Filter ID signal decoder |
| 27 | PLL filter ID signal decoder |
| 28 | Ground |

TDA 4601

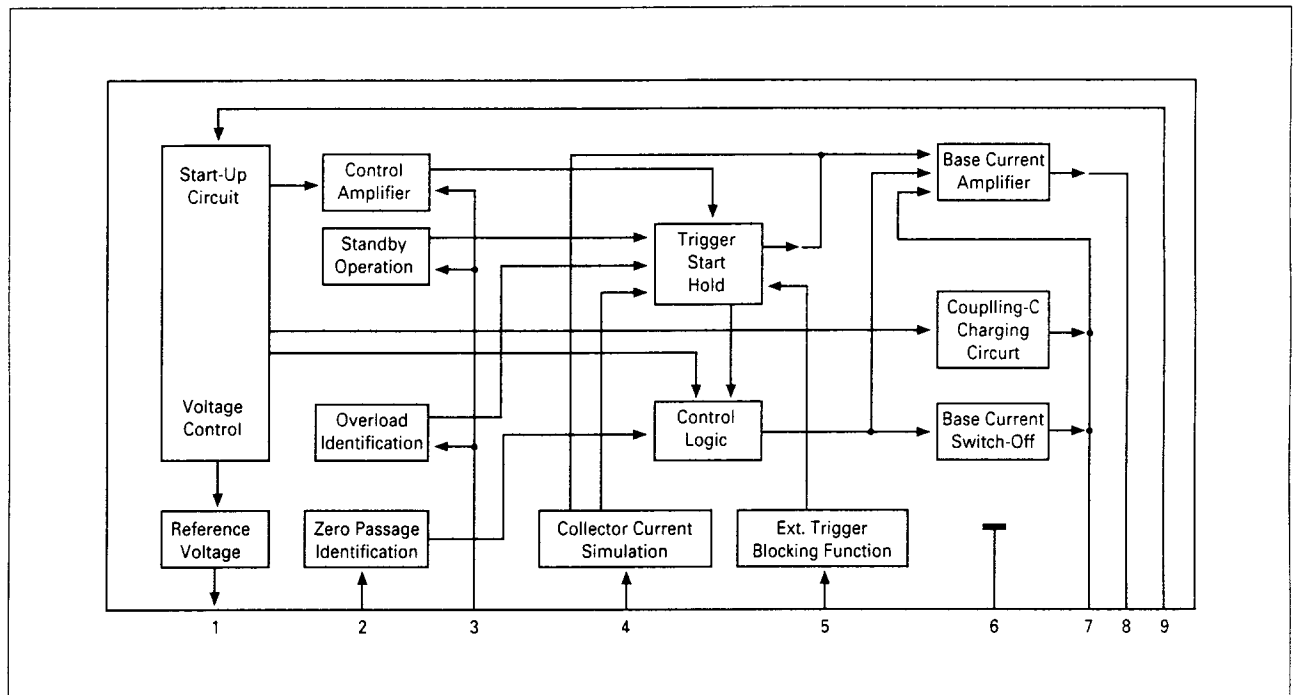
(1) Features

- Direct control of the switching transistor
- Low start-up current
- Reversing linear overload characteristic
- Base current drive proportional to collector current.
- Protective circuit in case of disturbance.

(2) General Description

The integrated circuit TDA 4601 is designed for driving, controlling and protecting the switching transistor in self-oscillation flyback converter power supplies as well as for protecting the overall power supply unit.

(3) Block Diagram



(4) Pin Description

| PIN | DESCRIPTION |
|-----|---|
| 1 | VREF output |
| 2 | Zero passage identification |
| 3 | Input control amplifier, overload amplifier |
| 4 | Collector current simulation |
| 5 | Connection for additional protective circuit |
| 6 | Ground(rigidly connected to substrate mounting plate) |
| 7 | DC output for charging coupling capacitor |
| 8 | Pulse output-driving of switching transistor |
| 9 | Supply voltage |

■ CP-365 CIRCUIT DESCRIPTION

The function of the circuits used in CP-365 are described in this chapter. The component numbers, used in this description, refer to the circuit diagram.

1. Small signal part with TDA8362

TDA8362 is realized in BIMOS process; the high frequency bipolar process is used for video processing and the MOS process is used for the digital part.

TDA8362 combines all small signal functions, except the tuning, required for a colour television receiver.

Newly developed internal circuitry, such as integrated luminance delay line, chroma bandpass and trap, PLL sound demodulator and switches, reduce the number of required pins, external components and alignments.

The reference tuned circuit is the only remaining alignment for this 52 pins (S-Dil) TV-processor!

The alignment-free SECAM add-on colour decoder circuit (TDA8395) can be used for applications with automatic standard switching.

The internal functions of TDA8362 are

- Completely symmetrical AC-coupled vision I.F. amplifier and synchronous video demodulator
- A.G.C. detector suited for positive and negative modulation
- Tuner A.G.C., for PNP tuners
- Sample and hold A.F.C. circuit, with internal 90° phase shift
- Video pre-amplifier
- Inputs and switches for external audio, CVBS and S-VHS signals
- Sound I.F. limiter, automatic PLL demodulator and pre-amplifier with DC volume control.
- Separate supply pin to start the horizontal circuitry from the mains rectifier
- Horizontal synchronization circuit with 2 control loops
- Vertical synchronization (divider system), automatic 50/60Hz adaption
- Vertical and horizontal drive circuits
- PAL/NTSC colour decoder, with automatic standard switching
- Chroma filters (bandpass and trap) with automatic system adaption
- Luminance delay line
- Peaking circuit is the luminance channel
- Mute function
- X-ray protection possibility.

1.1. Vision I.F. amplifier, video demodulator and identification circuit.

- The vision I.F. amplifier consists of three AC-coupled differential stages.

The gain control per stage is more than 20dB, which results in a total gain control of 64dB min. The amplifier is completely symmetrical, which has the advantage of a less critical application; the I.F. amplifier inputs can be coupled directly to the SAW-filter output.

The input impedance is 2k Ω in parallel with 3pF.

The input sensitivity for on-set of A.G.C. is 70 μ V (typ.), for I.F. frequencies between 38.9MHz and 58.75MHz.

- The reference carrier for the video demodulator is obtained via passive regeneration of the picture carrier. The reference tuned circuit is connected between pin 2 and 3.

The IC can handle positive and negative modulated signals, the polarity of the demodulation can be switched at pin 1 (open = neg. modulation, high = pos modulation).

- A transmitter identification circuit operates independently of the synchronization circuit, to allow separate use of the front-end section and the display section of the TDA8362.

1.2. A.G.C., tuner A.G.C. and A.F.C.

- The A.G.C. detector operates at top-sync level for signals with negative modulation and at peak-white level for positive modulated signals.

This A.G.C. detector is gated for negative modulated signals to reduce sensitivity to impulsive noise.

The time constant capacitor (C109) is connected externally at pin 48.

- The tuner AGC take-over point can be set by adjusting the DC-voltage at pin 49, with a potentiometer of 10k Ω (VR101).

The tuner A.G.C. (pin 47) is an open collector output stage with an output swing of 2mA min. the voltage swing, required by the tuner, can be obtained with an external resistor network, connected at pin 47. Pin 47 may rise 2V above the actual supply voltage level for min. gain.

- The A.F.C. circuit is driven by the same reference signal as the video demodulator. A sample and hold circuit avoids video bread-through from the video demodulator to the A.F.C. voltage.

The A.F.C. output voltage range is from 0 to 8V.

1.3. Horizontal and vertical synchronization

- The incoming video signal, pin 15 for the video signal is fed to the synchronization separator circuit. Internally the black level and the top sync level are detected, next the synchronization pulses are amplified to a fixed level and sliced at 50% of that level. In this way a very good synchronization performance is obtained. The separated synchronization pulses are fed to the first phase detector circuit and to the coincidence detector. The components which determine the loop gain of the first phase detector are connected at pin 40 (C401, CC401 and RC401). The coincidence detector is only used to detect whether the line oscillator is synchronized, not for transmitter identification. The line oscillator is running at twice the line frequency and locked to the X-tal controlled oscillator frequency of the colour decoder, consequently no adjustment is required. The free-running frequency has a maximum deviation of 2% compared to the nominal frequency. The second phase detector generates the pulses for the horizontal driver stage (pin 37). The loop filter capacitor (C511) is connected at pin 39. Horizontal shift can be obtained by a potentiometer and series resistor (VR401) connected at pin 39. The TDA8362 has a separate start-up circuit for the horizontal oscillator (pin 36). In case this feature is used for starting the horizontal deflection the resistor connected at the base of the horizontal driver transistor must be connected to the start supply as well (pin 37 is an open collector). For applications which do not require a start-up function pin 36 must be connected to the main supply voltage (pin 10).
- The vertical drive pulses (pin 43) are generated by a divider circuit. The vertical ramp generator components are connected at pin 42. Capacitor C308 is charged via resistors (R311, VR302, R308) connected to +33V AC and DC feedback voltage from the vertical deflection stage must be connected at pin 41.

1.4. Integrated video filters

- The TDA8362 has an alignment-free internal chroma bandpass and trap circuit. These filters are realized by means of gyrator circuits and they are tuned by tracking to the frequency of the X-tal controlled oscillator.
- The luminance delay and the delay required for peaking are also realized by gyrator circuits. The peaking circuit can be controlled by μ -processor output voltage.

1.5. Colour decoder.

- The colour decoder contains an alignment-free X-tal oscillator, a killer circuit and the colour difference signals demodulators.

The decoder adapts automatically for PAL and NTSC signals. With the SECAM add-on decoder TDA8395 an alignment free multi-standard decoder with automatic selection can be built. This makes the application of the TDA8362 very flexible.

The following applications are possible:

– PAL-only

Connect one or two crystals to the IC (when just one crystal is used the other crystal pin has to be connected to ground via a resistor) and the hue control pin to the positive supply via a resistor of about 30 k Ω . In this condition the decoder will not search for NTSC signals.

– PAL/NTSC

Connect one or two crystals to the IC and supply a control voltage between 0 and 5 V to the hue control pin. The decoder will identify PAL and NTSC signals at one or two frequencies. For the reception of the PAL-N and the PAL-M standard the two 3.6 MHz X-tals must be connected to pin 34. The switching between the X-tals must be made externally.

– PAL/SECAM

The chroma input signal for the SECAM decoder must be the same as that of the PAL decoder. This could be realized by means of an external switch which is connected in parallel with the internal video switch. In the TDA8362 we have a better alternative. When the NTSC option is not required the output signal of the switch can be obtained from the hue control input when this input is connected to the positive supply line via a suitable resistor.

– PAL/SECAM/NTSC

In this case the hue control must be active so that the previous application is not possible. Therefore an external video switch has to be added for this application.

In CP-365, the first three applications are possible, but in PAL/NTSC application NTSC-M is available in external video only.

The burst phase detector locks the X-tal oscillator with the burst signal.

Two gain modes provide an increased catching range when the PLL is un-locked and low ripple voltage and good noise immunity when the PLL is locked. The burst phase detector operates during the burst key period only, to prevent the PLL from being disturbed by the chroma signal.

The killer circuit switches-off the R-Y and B-Y demodulators at too low input signal condition (burst amplitude). Proper hysteresis prevent constant on/off switching at a certain input level.

1.7. R.G.B output and input circuits

The colour difference signals are matrixed with the luminance signal to obtain the R,G,B output signals (pin 18, 19 and 20). Linear amplifiers have been chosen to interface external R,G,B signals (pin 22, 23 and 24) coming from the Peritelevision connector. The contrast and brightness control operate both on internal and external signals. The data insertion pin 21 has a second detection level at 4V. Above this level the R,G,B outputs are blanked. In this way on-screen display (O.S.D.) signals can be supplied directly to the inputs of the video output stages without any interaction to the RGB outputs of the colour decoder part of the TDA8362.

2. Tuner

The board of CP-365 is designed to use the tuner type VTSS-7SZ3(PAL/SECAM-B/G, D/K'), TEKE4-073A(HYPER BAND), DET7BZ(PAL-I).

These have combined VHF/UHF (DET7BZ is UHF only), electronic tuning and band switching.

They can be used in applications with voltage synthesis tuning system.

The tuners fulfill all requirements concerning radiation, signal handling capacity and immunity for radiated interferences.

| | BAND | STANDARD | PIF |
|-----------|------------|----------|-------|
| VTSS-7SZ3 | VHF UHF | B/G, D/K | 38.9M |
| TEKE-073A | VHF UHF | B/G | 38.9M |
| DET7BZ | UHF | I | 39.5M |

3. SECAM decoder TDA8395

The TDA8395 is an alignment-free SECAM colour decoder and can be used in conjunction with the TDA8362. It includes the Cloche filter, demodulator and identification circuit. The TDA8395 application needs very few external components.

The cloche filter is a gyrator-capacitor type filter. Its resonance frequency is controlled during the calibration period and offset during scan for the right resonance frequency. The required reference frequency for calibration must be connected at pin 1 and obtained from the TDA8362 (pin 32). The two (or three-) level sandcastle pulse has to be connected at pin 15(TDA8362 pin 38) and used for generation of the blanking periods and provides clock information for the identification circuit.

The chroma signal at pin 16 connected to pin 27 of the TDA8362 is demodulated by a PLL demodulator, which uses the reference frequency and a bandgap reference to force the PLL to the desired demodulation characteristic. Digital line identification is implemented to check the incoming signal for SECAM. IF SECAM is detected and pin 1 will sink a current of 150 μ A. Together with the TDA8362 the voltage at this pin will become high (5.5V). In this case the colour difference signal outputs will be switched on. These outputs will be disconnected and high-ohmic when no SECAM is detected for two frame periods the demodulator will be initialized before trying again.

4. Baseband delay line TDA4661

TDA4661 are integrated baseband delay lines of 64 μ S for colour television receivers. It can be connected to the TDA8362 and TDA8395 without the need of switches and alignments. The TDA4661 consists of two main blocks.

- Two comb filters with a delay time of 64 μ sec in switched capacitor
- Internal clock generation of 3MHz, line locked via the sandcastle pulse

The TDA4661 operates according to the mode demanded by the colour transmission standard. In PAL mode it operates as a geometric adder to satisfy the requirements of PAL demodulation, in NTSC mode it reduces cross-colour interference (comb-filtering) and in SECAM mode the delay line repeats the colour difference signal on consecutive horizontal scan lines.

The colour difference signals are AC-coupled to pin 14 and 16 and clamped by the input stages. The internal clock drives the delay lines to obtain the required 64 μ sec. The clock pulses are derived from a 6MHz Current Controlled Oscillator which is line locked via a PLL with the sandcastle pulse, connected at pin 5. Sample and hold low pass filters suppress the clock signal. The delayed and un-delayed signal are added buffered and fed to the output pins 11 and 12.

5. SOUND OUTPUT STATE TDA 7263M

TDA7263M is class AB dual audio power amplifier assembled in the multiwatt package specially designed for high quality sound application stereo TV sets.

TDA7263M has the AC short circuit protection and thermal overload protection.

TDA7263M delivers an output power of 2W into a loud-speaker load of 8Ω with 28V supply voltage without the need of an external heatsink.

The gain is internally fixed at 60dB.

L, R outputs at pins 1,2 of sound board make inputs at pins 1,5 of TDA7263M, and they are amplified.

The pins 8,10 which are sound outputs of TDA7263M generate amplified sound, and a sound comes out of loud-speaker via C610, C611.

6. Vertical output stage with AN5515 (DBL2004)

AN5515 (DBL2004) is a vertical deflection output circuit for drive of various deflection systems with currents up to 1.48APP.

Pin 43 of TDA8362 is connected to pin 4, the input for the driver of the output stage via R309.

Capacitors C301, C302 are for decoupling.

During scan the capacitor between pin 3 and 6(C304) is charged. When the flyback starts and the voltage at the output pin 2 exceeds the supply voltage at pin 7, the flyback generator is activated. The supply voltage is then connected in series, via pin 6, with the voltage across capacitor C304 during the flyback period. This implies that the supply voltage can be reduced to the required scan voltage plus the saturation voltage of the transistors.

The vertical synchronization information required by a μ -processor, available at pin 6 is obtained via R301, D301.

7. Horizontal Deflection stage

The horizontal drive pulses, pin 37 of TDA8362, are connected to the base of driver transistor Q401 via resistor R454.

The base current of the driver transistor is supplied via RC405 (pin 37 is an open collector output).

The driver transformer (T402) drives deflection transistor Q403.

T402 is EHT transformer (Flyback transformer) and generates the EHT -, focus- and G2-voltage, required by the picture tube. Furthermore the +185V supply and heater voltage are derived from this transformer.

At pin 7 the beam current information is measured via resistor R409. This information is used for reducing the contrast at too high beam currents (via D708).

The flyback voltage is clipped between +8V and ground by diodes D407, D468 to obtain a well shaped flyback pulse for feedback to the TDA8362 (pin 38).

A horizontal synchronization information required by a possible μ -processor is obtained via R416 & D406 connected at pin 3 of the FBT.

8. POWER SUPPLY WITH TDA4601

TDA4601 is designed for driving, controlling, and protecting the switching transistor in flyback converter power supplies during start-up, normal, and overload operation as well as during disturbed operation.

TDA4601 drives as start voltage(13V_{DC}) being supplied at pin 9 of TDA4601.

Continually, voltage(180V_{AC} \rightarrow 13V_{DC}, 270V_{AC} \rightarrow 15V_{DC}) is supplied at pin 6 of SMPS transformer(TSM-4402).

The function of power ON/OFF is activated by using switching transistor Q801(2SD1555).

The pin 1 of TDA 4601 is REFERENCE VOLTAGE PIN, pin 2 is AIR GAP PORT, pin 3 is the ADJUSTMENT PORT of secondary B+ level, pin 4 is AMP CONTROL PORT, pin 7 is the ELECTRIC DISCHARGE PORT of switching transistor, and pin 8 is OUTPUT VOLTAGE to drive switching transistor.

The voltage of secondary main B+ adjusts to 104V_{DC} to make use of variable Volume(VR801) at picture control maximum.

The protective operating mode of TDA4601 is that the base current shut-down activated by the control logic clamps the output of pin 7 to 1.6V_{DC}.

As a result, the drive of switching transistor is inhibited.

This protective measure is enabled if the supply voltage at pin 9 reaches a value 6.7V.

TDA4601 has self-protective function.

■ IC/TR DC VOLTAGE CHARTS

- * Input signal PAL/CH5-Video : 8 step colour bar (87.5% AM)
Audio : 1KHz sinewave (60% FM)
- * User's control condition Contrast, Brightness, Colour, Volume Controls-max.
- * Line voltage AC 230V, 50Hz
- * All the voltage in each point are measured with Mutimeter.

■ IC

1. I702 (TDA8362)

| | | | | | | | | | | |
|---------|---|-----|-----|---|---|---|-----|-----|---|----|
| Pin No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| V (DC) | 3 | 5.9 | 5.9 | 0 | 0 | 0 | 3.2 | 1.9 | 0 | 8 |

| | | | | | | | | | | |
|---------|----|-----|----|-----|----|----|----|-----|-----|-----|
| Pin No. | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| V (DC) | 0 | 3.5 | 0 | 4.7 | 4 | 8 | 3 | 1.5 | 1.5 | 1.9 |

| | | | | | | | | | | |
|---------|-----|----|----|----|-----|-----|-----|-----|-----|-----|
| Pin No. | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| V (DC) | 0.3 | 4 | 4 | 4 | 2.2 | 4.3 | 5.7 | 3.9 | 3.9 | 1.5 |

| | | | | | | | | | | |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pin No. | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| V (DC) | 1.5 | 1.7 | 4.7 | 2.9 | 2.1 | 8.2 | 0.4 | 0.5 | 2.7 | 3.8 |

| | | | | | | | | | | |
|---------|-----|-----|-----|-----|----|----|-----|-----|-----|-----|
| Pin No. | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| V (DC) | 2.2 | 2.9 | 2.6 | 3.8 | 4 | 4 | 3.2 | 4.3 | 1.5 | 3.7 |

| | | |
|---------|-----|-----|
| Pin No. | 51 | 52 |
| V (DC) | 4.6 | 6.6 |

2. I701 (TMS73C167)

| | | | | | | | | | | |
|---------|---|---|---|---|---|-----|-----|---|---|----|
| Pin No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| V (DC) | 4 | 0 | 4 | 4 | 4 | 4.4 | 1.3 | 0 | 0 | 0 |

| | | | | | | | | | | |
|---------|----|----|----|----|----|----|----|----|-----|----|
| Pin No. | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| V (DC) | 11 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 2.8 | 0 |

| | | | | | | | | | | |
|---------|----|----|----|----|----|----|----|----|----|----|
| Pin No. | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| V (DC) | 5 | 5 | 5 | 5 | 5 | 5 | 0 | 5 | 5 | 5 |

| | | | | | | | | | | |
|---------|----|----|----|----|----|----|----|----|----|----|
| Pin No. | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| V (DC) | 5 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 5 | 0 |

| | | | | | | | | | | |
|---------|----|----|-----|-----|----|----|----|----|----|----|
| Pin No. | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| V (DC) | 5 | 0 | 1.9 | 2.5 | 5 | 0 | 5 | 5 | 5 | 5 |

| | | | | |
|---------|----|----|----|----|
| Pin No. | 51 | 52 | 53 | 54 |
| V (DC) | 5 | 5 | 0 | 5 |

3. I502 (TDA4661)

| | | | | | | | | | | |
|---------|-----|---|---|---|-----|---|---|---|-----|----|
| Pin No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| V (DC) | 5.6 | 0 | 0 | 0 | 0.5 | 0 | 0 | 0 | 5.6 | 0 |

| | | | | | | |
|---------|-----|-----|----|-----|----|-----|
| Pin No. | 11 | 12 | 13 | 14 | 15 | 16 |
| V (DC) | 3.3 | 3.3 | 0 | 1.5 | 0 | 1.5 |

4. I503 (TDA8395)

| | | | | | | | | | | |
|---------|-----|-----|-----|---|---|---|---|-----|-----|-----|
| Pin No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| V (DC) | 1.7 | 1.2 | 8.2 | 0 | 0 | 0 | 3 | 4.2 | 1.5 | 1.5 |

| | | | | | | |
|---------|----|----|----|----|-----|-----|
| Pin No. | 11 | 12 | 13 | 14 | 15 | 16 |
| V (DC) | 0 | 0 | 0 | 0 | 0.5 | 5.7 |

5. I504 (LA7950)

| | | | | | | | | | | |
|---------|---|------|----|------|---|---|---|---|---|----|
| Pin No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| V (DC) | 5 | 11.8 | 11 | 11.2 | 0 | 0 | 0 | 0 | 0 | 0 |

6. I601 (TDA7263M)

| | | | | | | | | | | | |
|---------|-----|-----|----|-----|-----|---|---|------|----|------|----|
| Pin No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| V (DC) | 1.5 | 1.5 | 12 | 1.5 | 1.5 | 0 | 0 | 10.8 | 22 | 10.8 | 0 |

7. I301 (AN5515)

| | | | | | | | |
|---------|---|------|----|-----|---|-----|----|
| Pin No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| V (DC) | 0 | 11.7 | 27 | 1.4 | 0 | 0.9 | 27 |

8. I801 (TDA4601)

| | | | | | | | | | |
|---------|---|---|---|-----|---|---|---|-----|----|
| Pin No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| V (DC) | 4 | 0 | 2 | 2.3 | 7 | 0 | 2 | 1.9 | 13 |

9. I701 (SN76861)

| | | | | | | | | | | |
|---------|-----|-----|-----|-----|-----|-----|-----|---|-----|-----|
| Pin No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| V (DC) | 6.3 | 2.3 | 6.3 | 1.9 | 6.3 | 6.3 | 6.3 | 0 | 5.3 | 1.9 |

| | | | | | | | | | | |
|---------|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|
| Pin No. | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| V (DC) | 6.3 | 1.9 | 6.3 | 3 | 5.3 | 1.9 | 1.3 | 1.9 | 6.3 | 3.0 |

| | | | | | | | | | | |
|---------|-----|-----|-----|-----|----|----|----|----|----|-----|
| Pin No. | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| V (DC) | 5.3 | 6.3 | 1.9 | 6.3 | 0 | 5 | 5 | 0 | 0 | 3.8 |

| | | | | | | | | | | |
|---------|----|----|-----|----|-----|-----|-----|-----|------|-----|
| Pin No. | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| V (DC) | 0 | 0 | 5.8 | 0 | 5.8 | 5.8 | 6.2 | 2.5 | 11.8 | 3.2 |

10. I901 (CF72306)

| Pin No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---------|-----|-----|-----|---|---|---|---|-----|---|-----|
| V (DC) | 0.9 | 1.2 | 1.3 | 0 | 2 | 3 | 5 | 1.1 | 0 | 1.7 |

| Pin No. | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---------|----|----|----|----|-----|----|-----|----|----|----|
| V (DC) | 0 | 0 | 0 | 0 | 2.6 | 5 | 3.5 | 0 | 0 | 0 |

11. I902 (CF70200)

| Pin No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---------|---|-----|-----|---|---|-----|---|---|---|----|
| V (DC) | 5 | 1.5 | 1.5 | 5 | 5 | 2.6 | 0 | 0 | 0 | 0 |

| Pin No. | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---------|----|----|----|----|-----|----|----|----|----|----|
| V (DC) | 0 | 0 | 0 | 0 | 3.5 | 5 | 5 | 5 | 0 | 0 |

| Pin No. | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
|---------|----|----|----|----|-----|-----|----|----|
| V (DC) | 5 | 0 | 0 | 0 | 1.4 | 1.4 | 0 | 5 |

■ TR

1. Main Board

| Loc. No. | | Q101 | Q102 | Q113 | Q116 | Q117 | Q118 | Q202 | Q203 | Q204 | Q205 |
|----------|---|------|------|------|------|------|------|------|------|------|------|
| V (DC) | E | 3.3 | 1 | 0.8 | 0 | 11.8 | 11.7 | 0 | 0 | 0 | 2 |
| | C | 7.7 | 8.9 | 4.9 | 0.5 | 0 | 0 | 0 | 7.7 | 3.7 | 7.4 |
| | B | 0 | 1.7 | 1.4 | 0 | 11.8 | 11.7 | 0 | 0 | 0 | 2.6 |

| Loc. No. | | Q210 | Q211 | Q212 | Q221 | Q250 | Q401 | Q402 | Q601 | Q610 | Q701 |
|----------|---|------|------|------|------|------|------|------|------|------|------|
| V (DC) | E | 11.6 | 11.6 | 11.6 | 0 | 0 | 0 | 0 | 1.8 | 0 | 0 |
| | C | 0 | 11 | 0 | 4.7 | 6.3 | 2 | 36 | 11.6 | 13 | 6.5 |
| | B | 11 | 11.6 | 11 | 0 | 0 | 0 | 0.5 | 2 | 0 | 1.4 |

| Loc. No. | | Q702 | Q703 | Q704 | Q705 | Q706 | Q707 | Q709 | Q710 | Q711 | Q712 | Q803 | Q804 | Q805 | Q806 |
|----------|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| V (DC) | E | 0 | 0 | 0 | 1 | 0 | 0 | 7.8 | 0 | 3.1 | 0 | 0 | 0 | 12 | 0 |
| | C | 1.4 | 5 | 0 | 0 | 4.7 | 4 | 7.8 | 0 | 11.3 | 0 | 0.6 | 0.6 | 12 | 13 |
| | B | 1.4 | 0 | 5 | 5 | 0 | 0 | 7.2 | 0.6 | 3.7 | 5 | 0 | 0 | 0 | 0 |

2. CRT Board

| Loc. No. | | Q501 | Q511 | Q521 | Q502 | Q512 | Q522 |
|----------|---|------|------|------|------|------|------|
| V (DC) | E | 2 | 2 | 2 | 2.9 | 2.9 | 2.9 |
| | C | 145 | 145 | 145 | 0 | 0 | 0 |
| | B | 2.6 | 2.6 | 2.6 | 2.2 | 2.2 | 2.2 |

3. NICAM Board

| Loc. No. | | QA01 | QA02 | QA03 | QA04 | QA06 | QA07 |
|----------|---|------|------|------|------|------|------|
| V (DC) | E | 6.6 | 0 | 0 | 6.7 | 6.7 | 0 |
| | C | 12 | 0 | 0 | 12 | 12 | 6.1 |
| | B | 7.3 | 0.7 | 0 | 0 | 7.3 | |

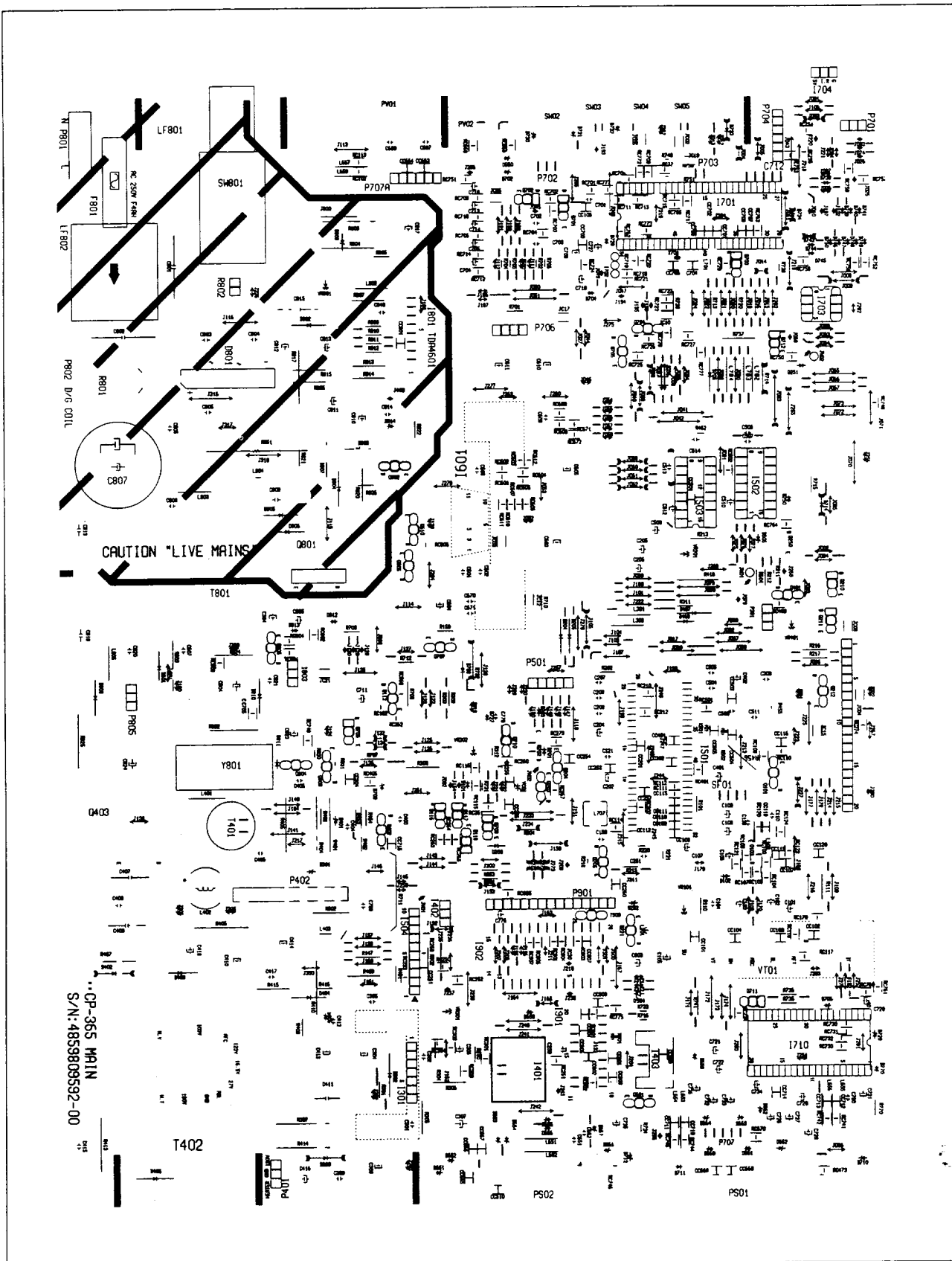
4. 2-Carrier Board

| Loc. No. | | QS01 | QS02 | QS03 |
|----------|---|------|------|------|
| V (DC) | E | 0 | 0 | 0 |
| | C | 0.1 | 2.6 | 4.8 |
| | B | 0.6 | 0 | 0 |

PRINTED CIRCUIT BOARDS

■ Solder Side

• MAIN PCB



NICAM PCB SN:4859836523

RA16 RA27 RA21 RA22 RA20 RA26 RA23 RA25 RA24 RA19 RA18 RA17 RA15 RA14 RA13 RA12 RA11 RA10 RA9 RA8 RA7 RA6 RA5 RA4 RA3 RA2 RA1 RA0

CA29 CA28 CA27 CA26 CA25 CA24 CA23 CA22 CA21 CA20 CA19 CA18 CA17 CA16 CA15 CA14 CA13 CA12 CA11 CA10 CA9 CA8 CA7 CA6 CA5 CA4 CA3 CA2 CA1

LA1 LA2 LA3 LA4 LA5 LA6 LA7 LA8 LA9 LA10 LA11 LA12 LA13 LA14 LA15 LA16 LA17 LA18 LA19 LA20 LA21 LA22 LA23 LA24 LA25 LA26 LA27 LA28 LA29 LA30 LA31 LA32 LA33 LA34 LA35 LA36 LA37 LA38 LA39 LA40 LA41 LA42 LA43 LA44 LA45 LA46 LA47 LA48 LA49 LA50 LA51 LA52 LA53 LA54 LA55 LA56 LA57 LA58 LA59 LA60 LA61 LA62 LA63 LA64 LA65 LA66 LA67 LA68 LA69 LA70 LA71 LA72 LA73 LA74 LA75 LA76 LA77 LA78 LA79 LA80 LA81 LA82 LA83 LA84 LA85 LA86 LA87 LA88 LA89 LA90 LA91 LA92 LA93 LA94 LA95 LA96 LA97 LA98 LA99 LA100

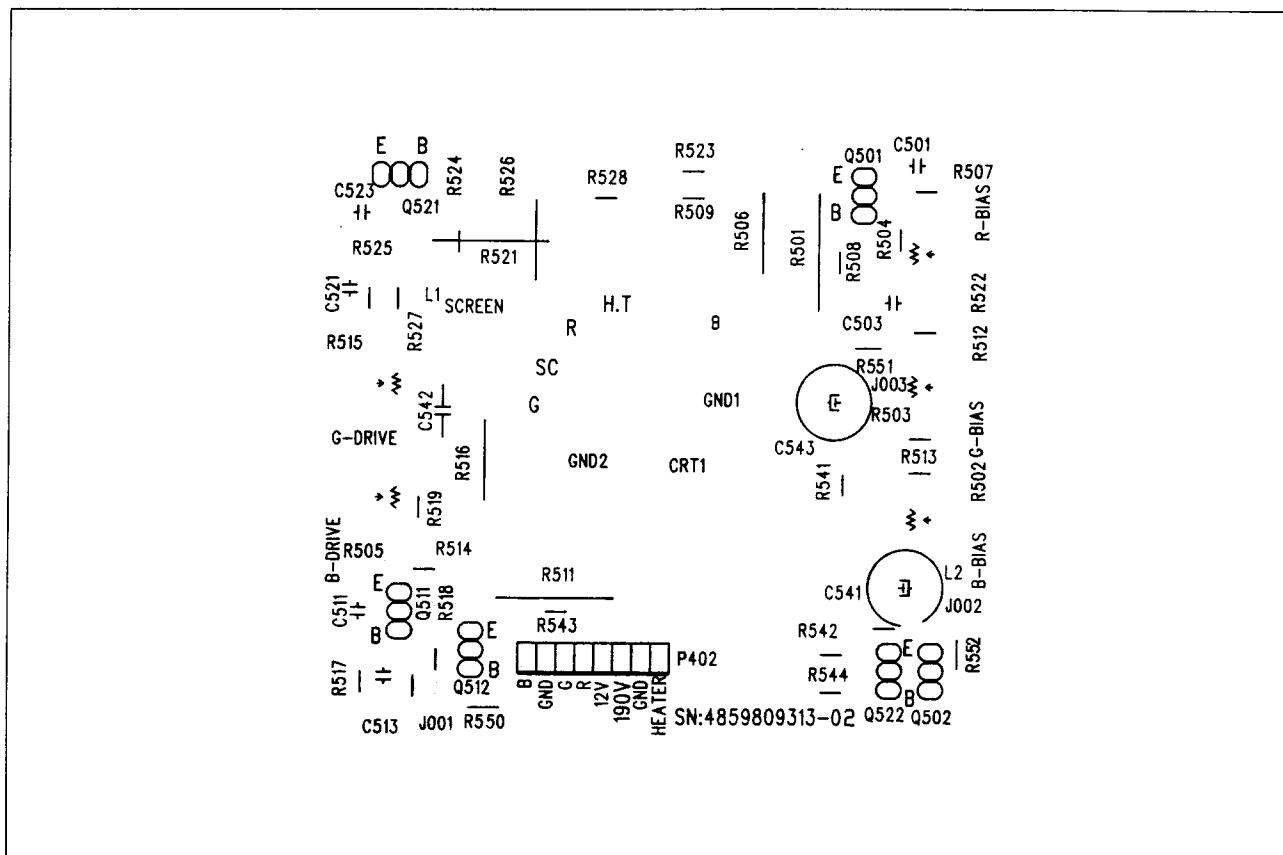
SA1 SA2 SA3 SA4 SA5 SA6 SA7 SA8 SA9 SA10 SA11 SA12 SA13 SA14 SA15 SA16 SA17 SA18 SA19 SA20 SA21 SA22 SA23 SA24 SA25 SA26 SA27 SA28 SA29 SA30 SA31 SA32 SA33 SA34 SA35 SA36 SA37 SA38 SA39 SA40 SA41 SA42 SA43 SA44 SA45 SA46 SA47 SA48 SA49 SA50 SA51 SA52 SA53 SA54 SA55 SA56 SA57 SA58 SA59 SA60 SA61 SA62 SA63 SA64 SA65 SA66 SA67 SA68 SA69 SA70 SA71 SA72 SA73 SA74 SA75 SA76 SA77 SA78 SA79 SA80 SA81 SA82 SA83 SA84 SA85 SA86 SA87 SA88 SA89 SA90 SA91 SA92 SA93 SA94 SA95 SA96 SA97 SA98 SA99 SA100

EXT. JX4 JX5 JX6 JX7 JX8 JX9 JX10 JX11 JX12 JX13 JX14 JX15 JX16 JX17 JX18 JX19 JX20 JX21 JX22 JX23 JX24 JX25 JX26 JX27 JX28 JX29 JX30 JX31 JX32 JX33 JX34 JX35 JX36 JX37 JX38 JX39 JX40 JX41 JX42 JX43 JX44 JX45 JX46 JX47 JX48 JX49 JX50 JX51 JX52 JX53 JX54 JX55 JX56 JX57 JX58 JX59 JX60 JX61 JX62 JX63 JX64 JX65 JX66 JX67 JX68 JX69 JX70 JX71 JX72 JX73 JX74 JX75 JX76 JX77 JX78 JX79 JX80 JX81 JX82 JX83 JX84 JX85 JX86 JX87 JX88 JX89 JX90 JX91 JX92 JX93 JX94 JX95 JX96 JX97 JX98 JX99 JX100

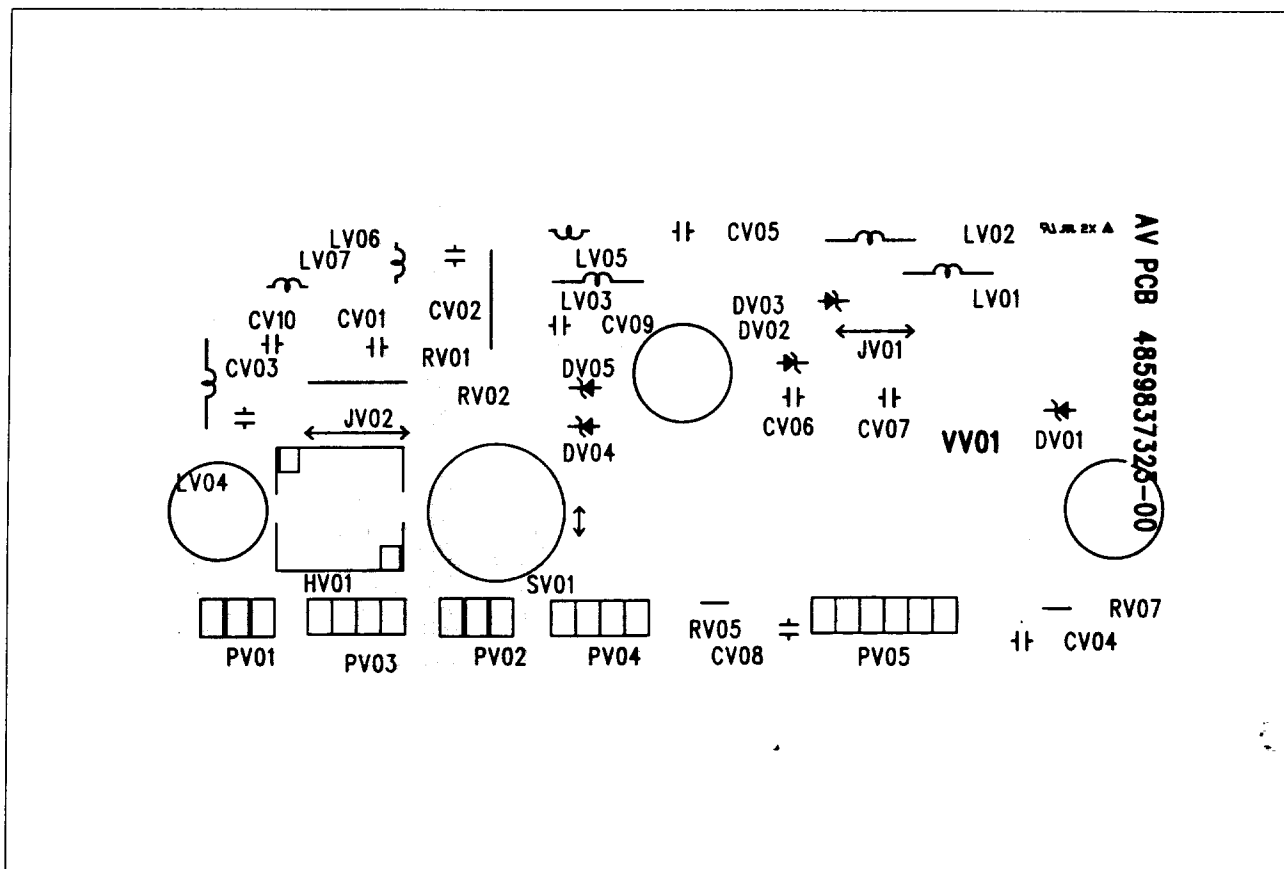
PA01 PA02 PA03 PA04 PA05 PA06 PA07 PA08 PA09 PA10 PA11 PA12 PA13 PA14 PA15 PA16 PA17 PA18 PA19 PA20

104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200

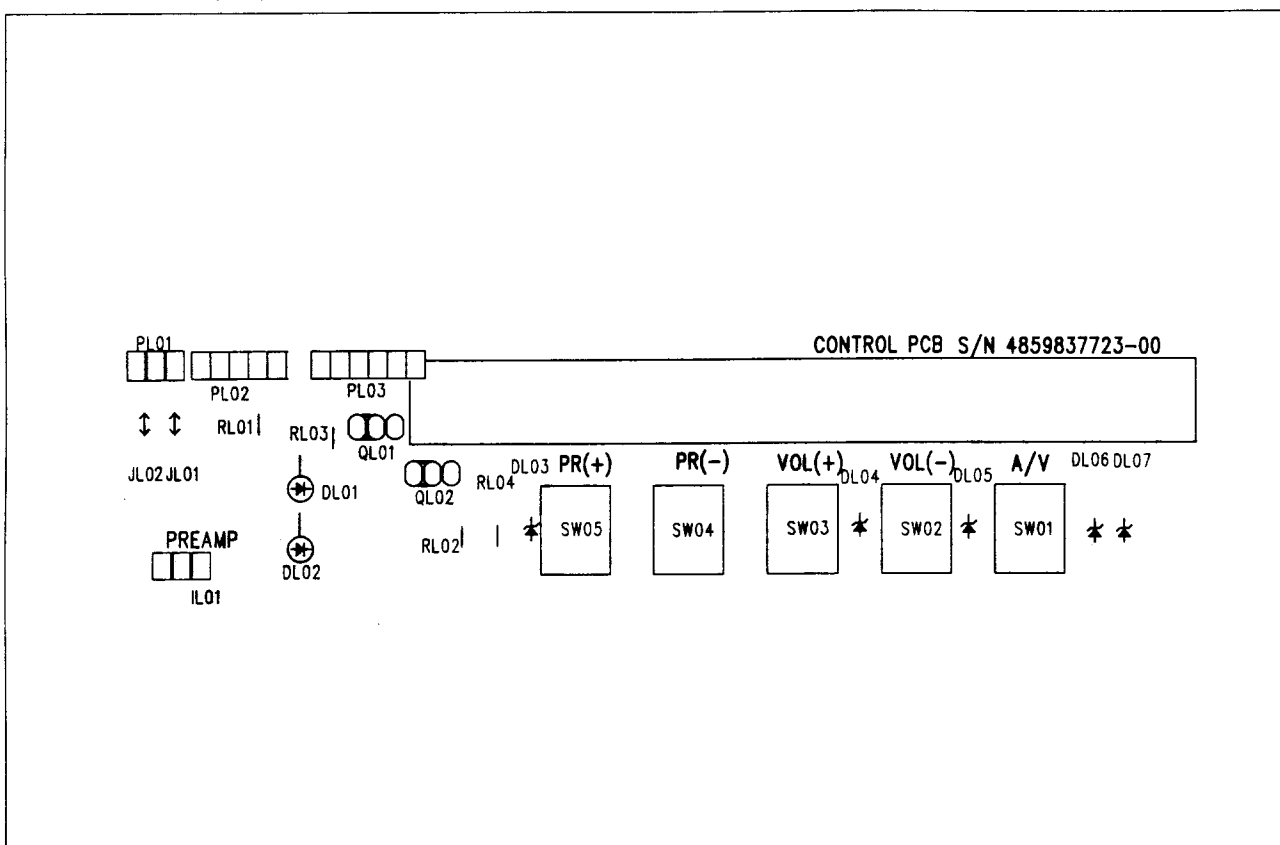
• CRT PCB



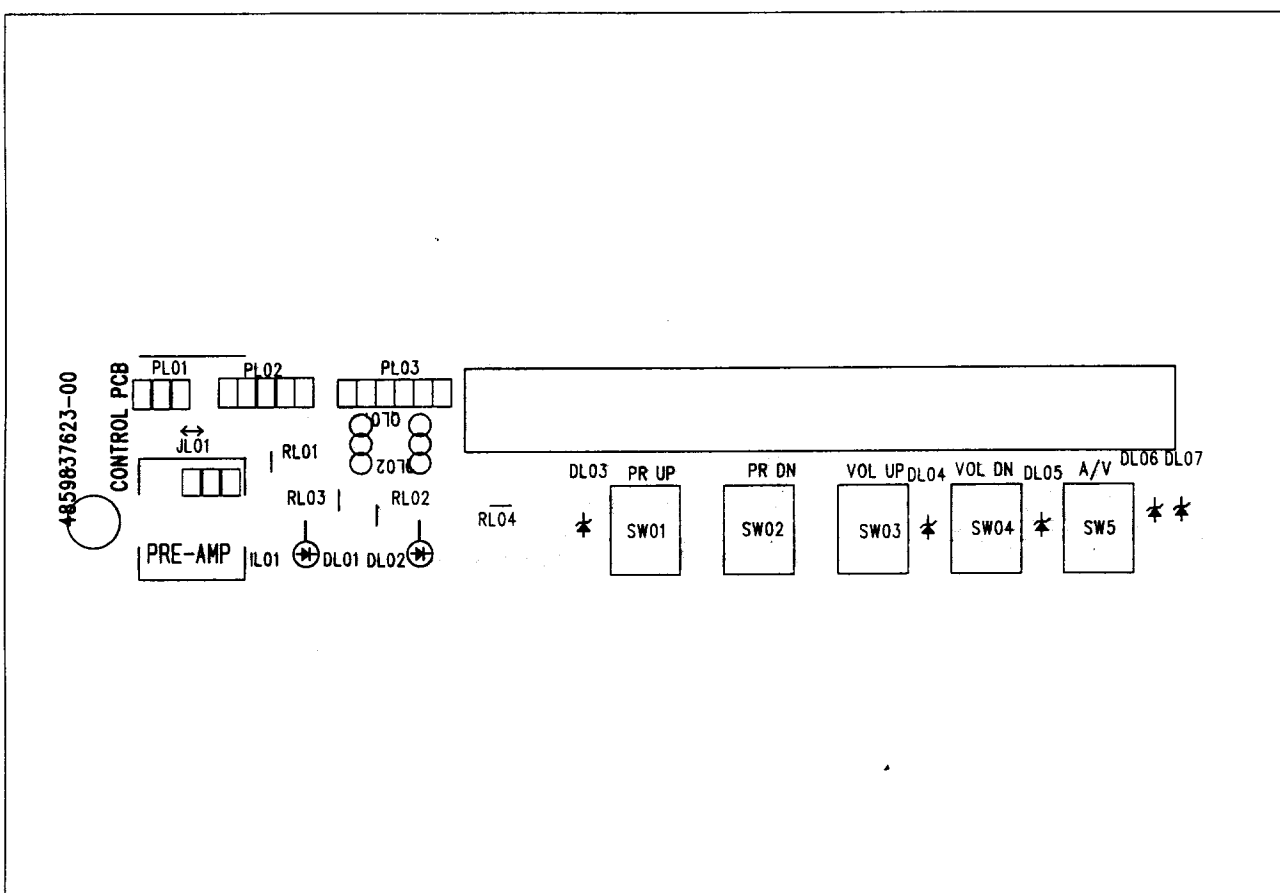
• A/V JACK PCB



• CONTROL PCB (-C1)

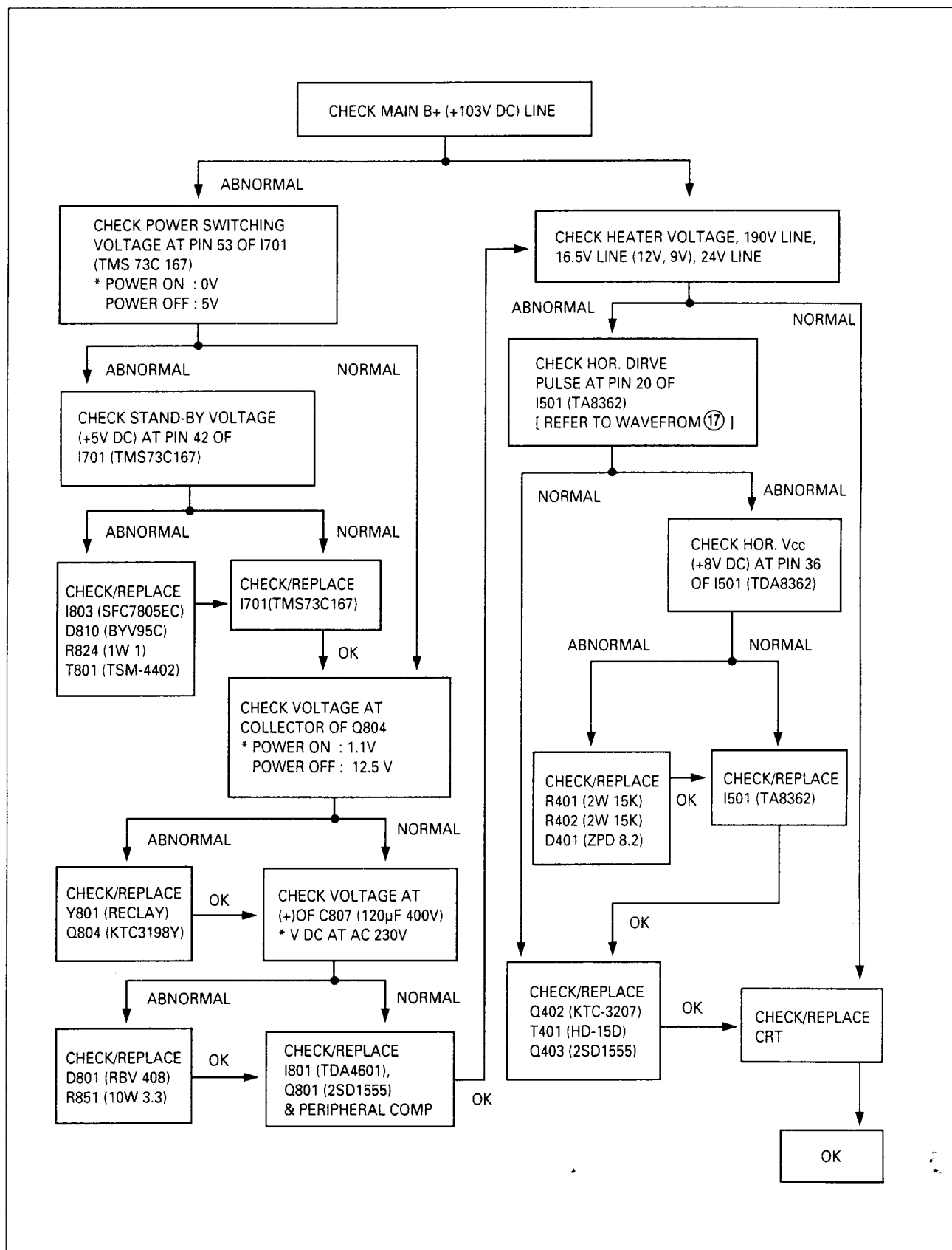


• CONTROL PCB (-2195)

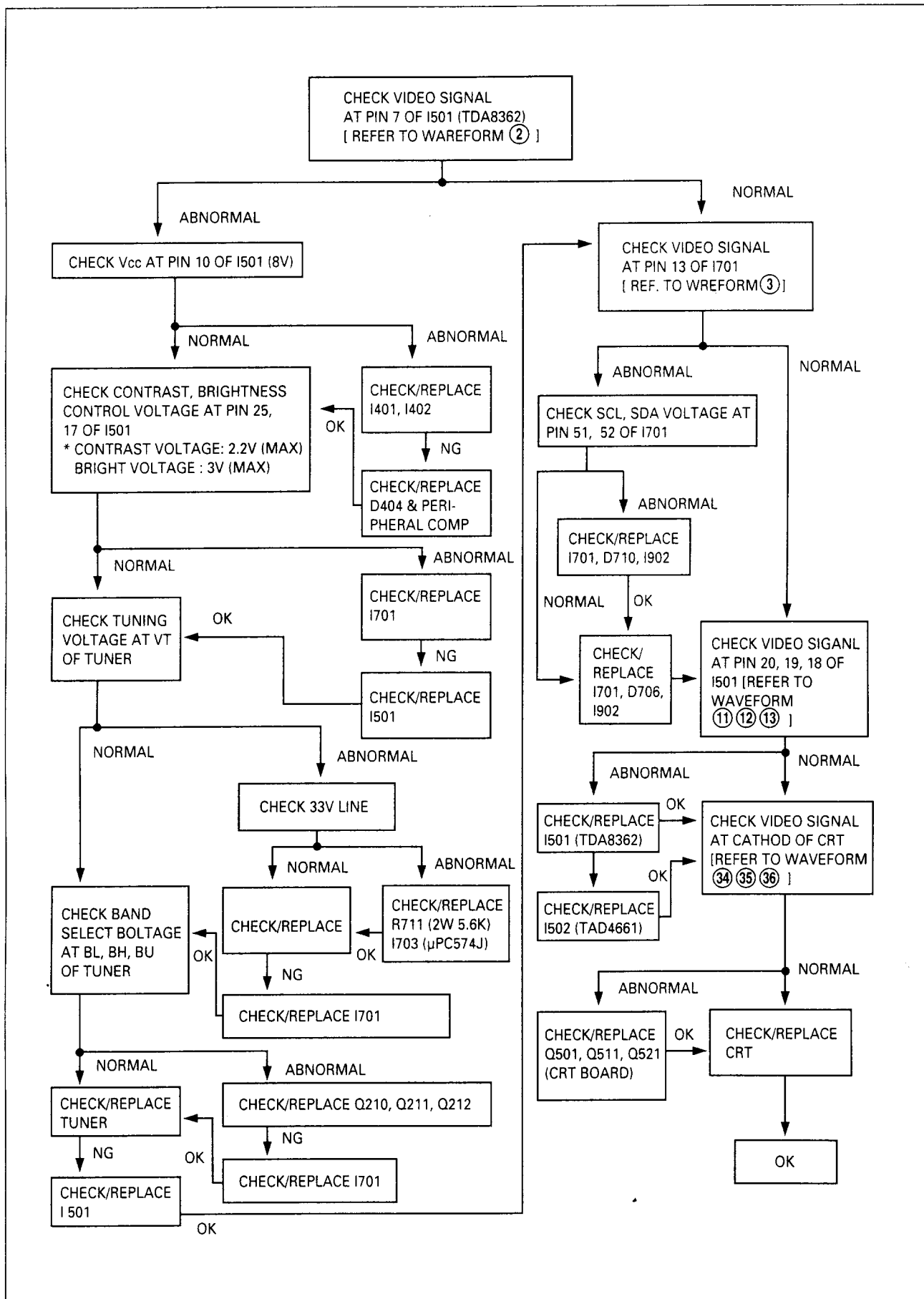


TROUBLE SHOOTING CHARTS

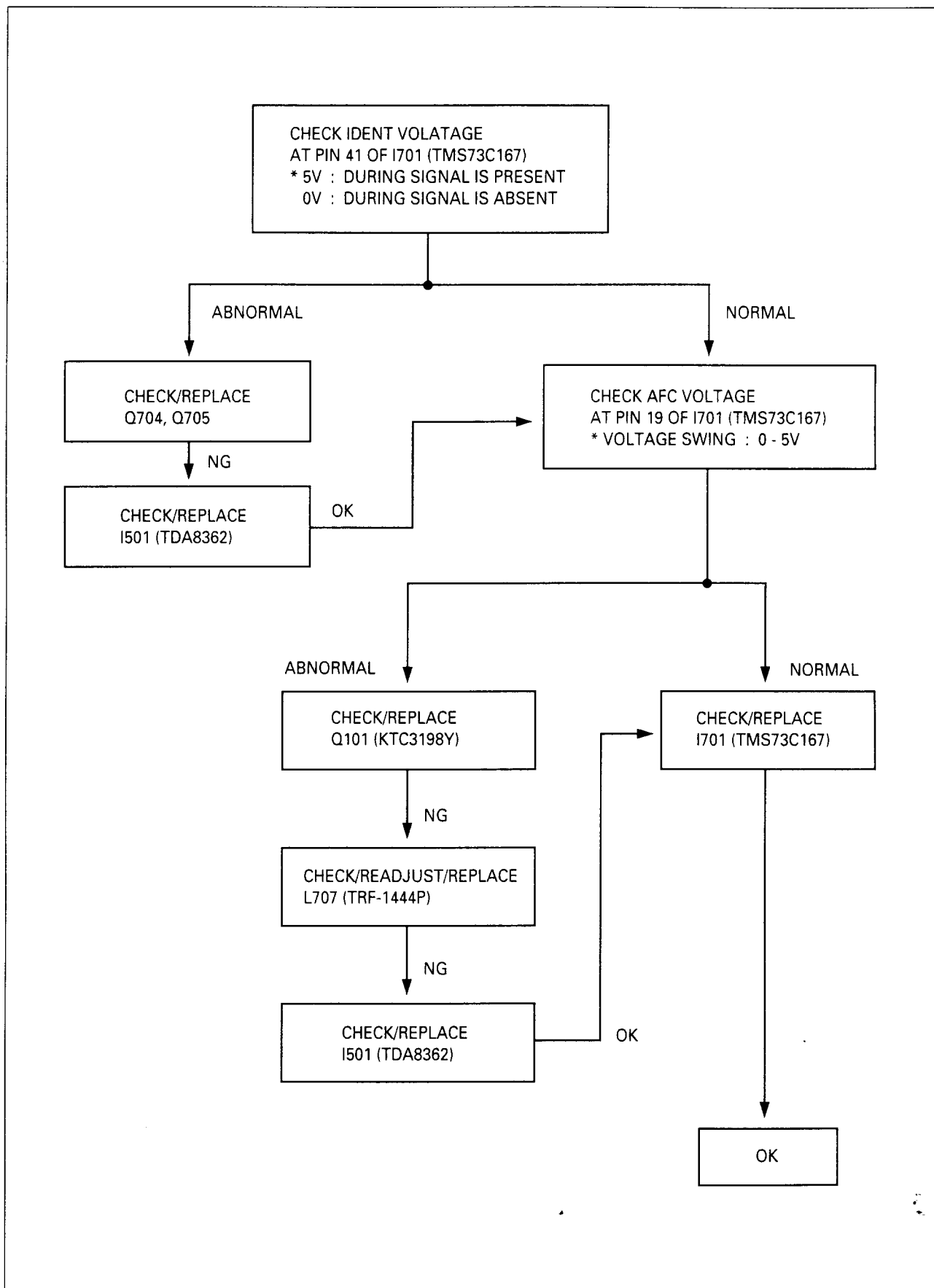
NO RASTER



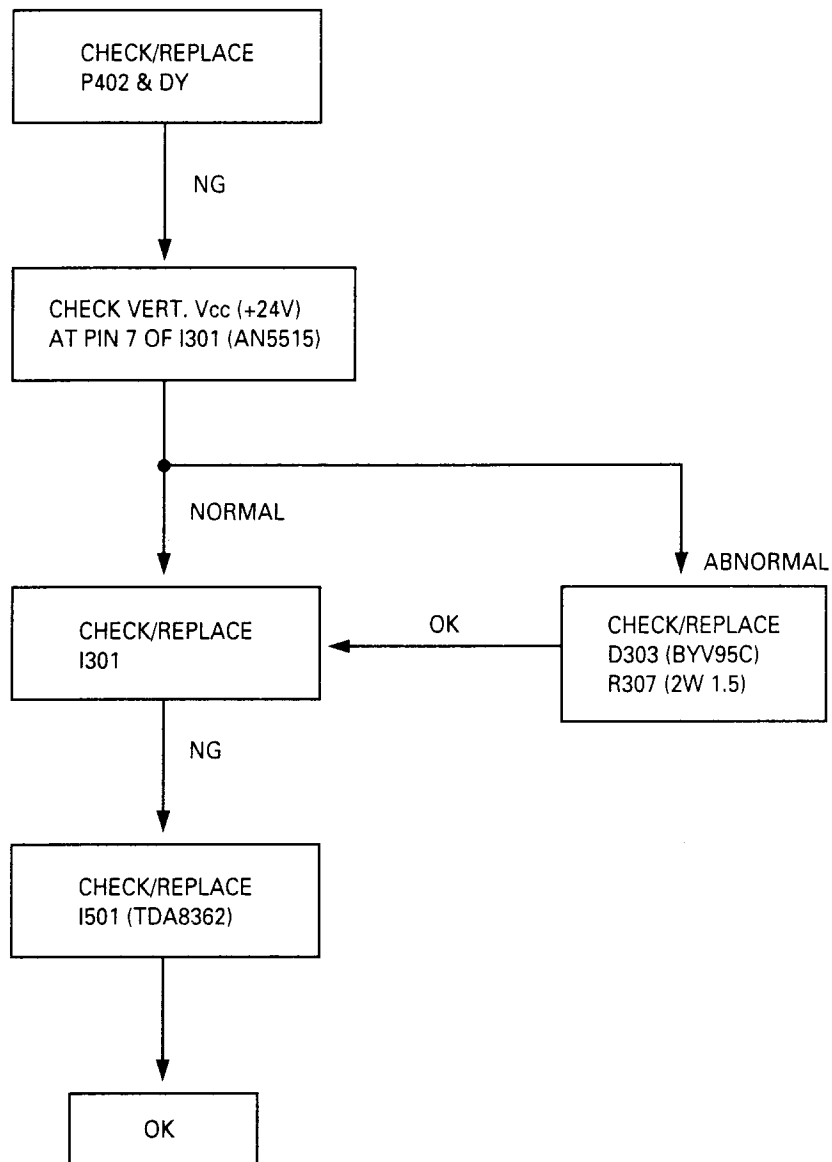
■ NO PICTURE(RASTER OK)



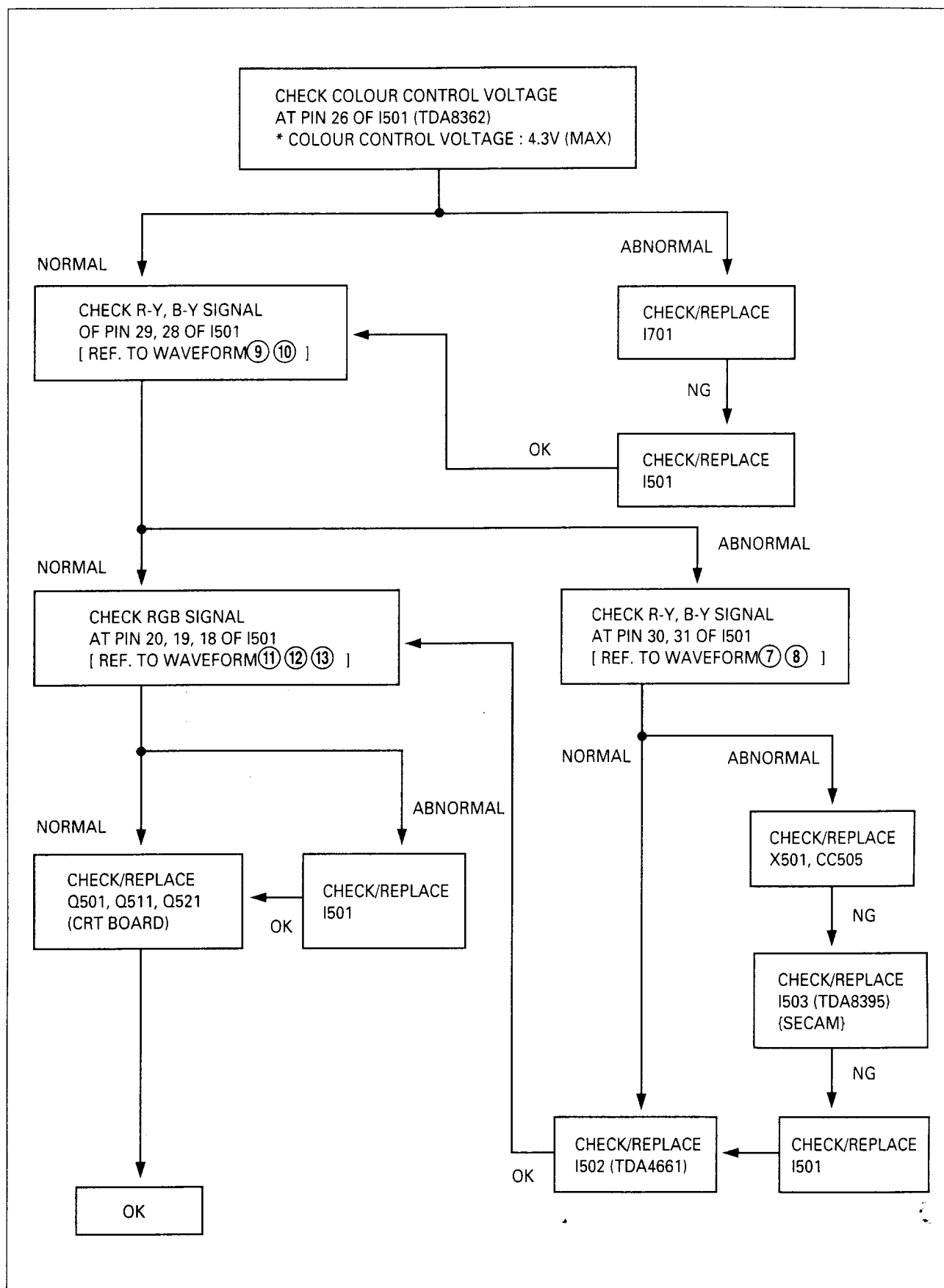
■ AUTO SEARCH TROUBLE (CHANNEL SKIP)



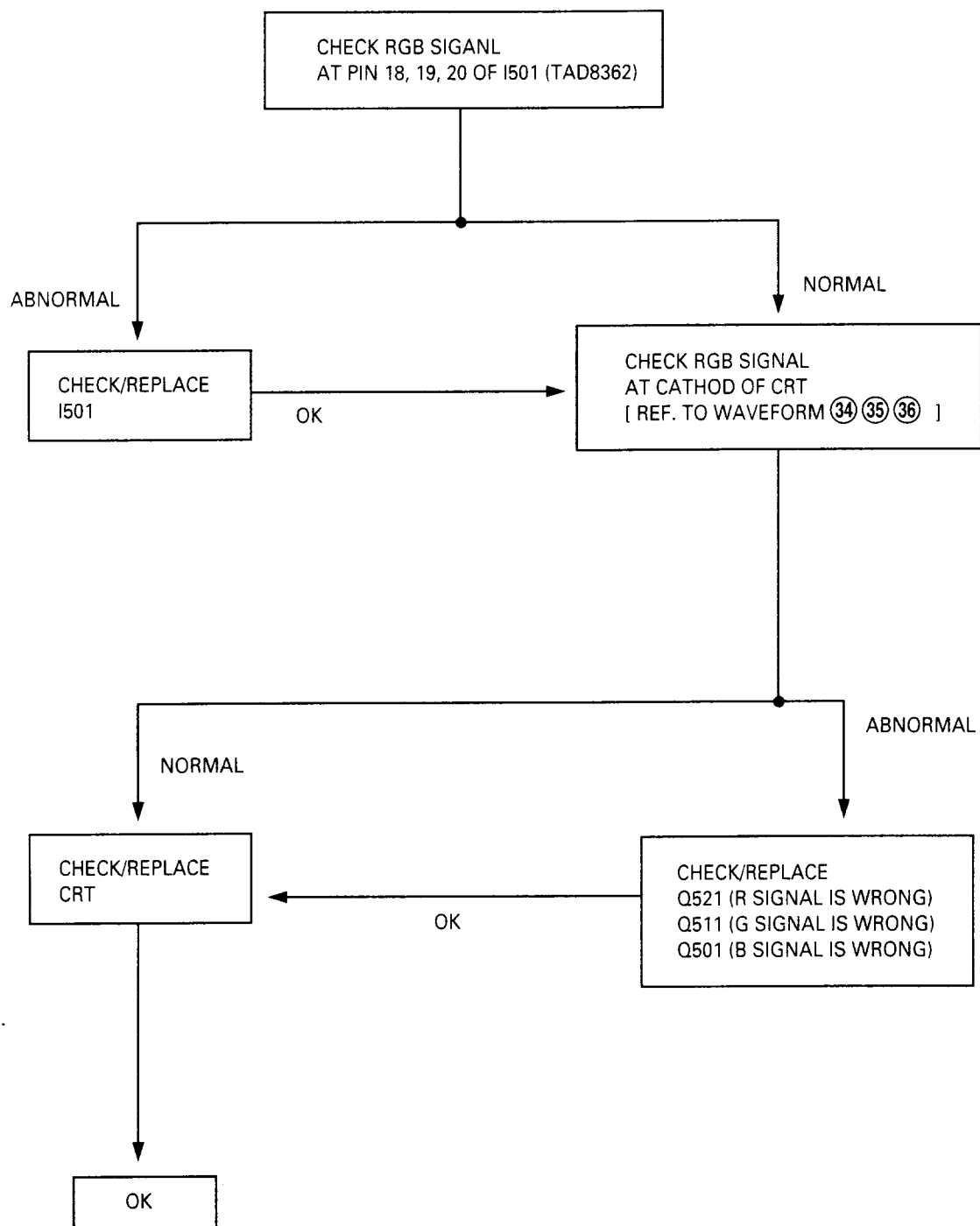
■ NO VERTICAL SCANNING (ONE HORIZONTAL LINE ON SCREEN)



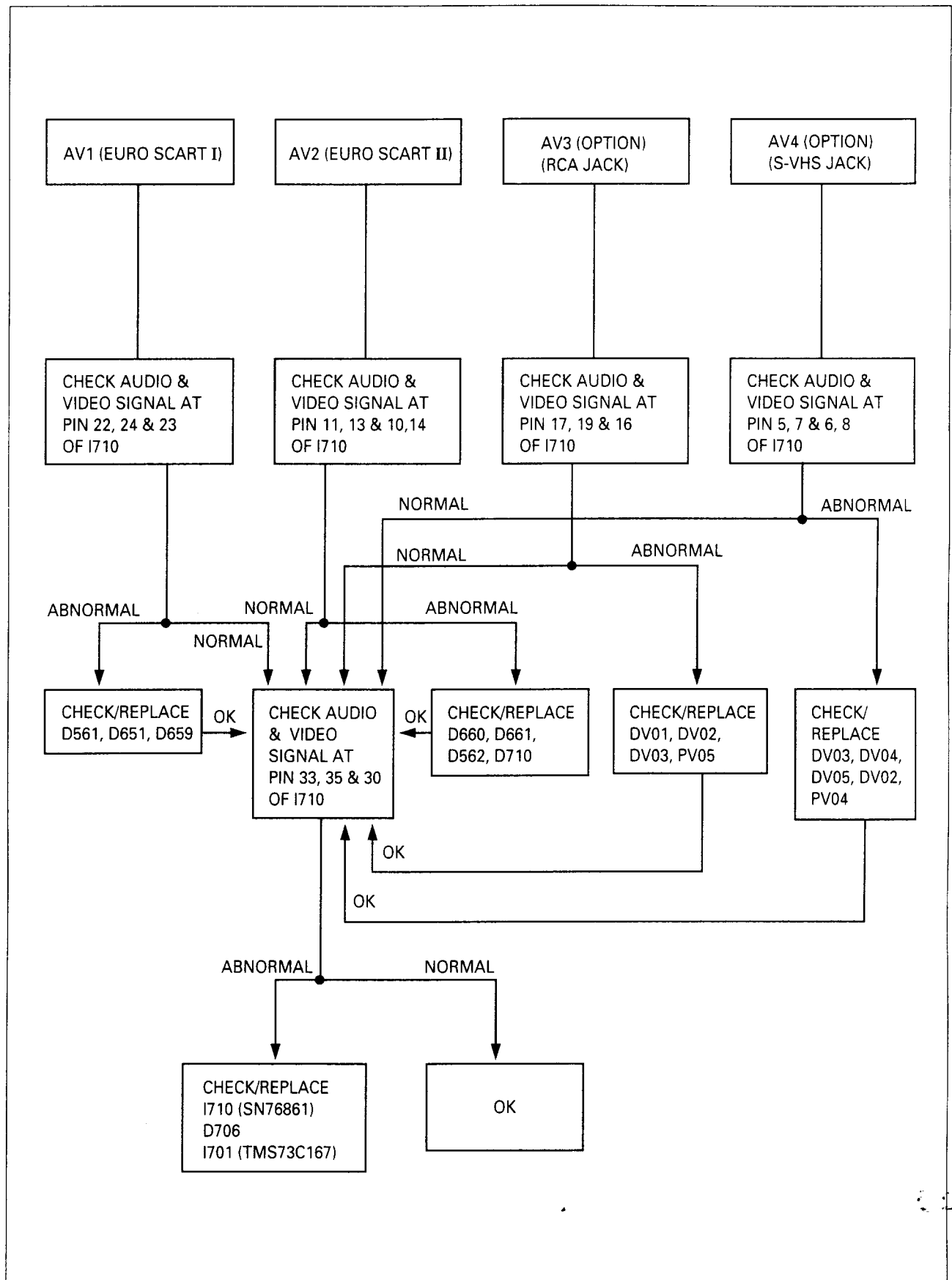
■ NO COLOR



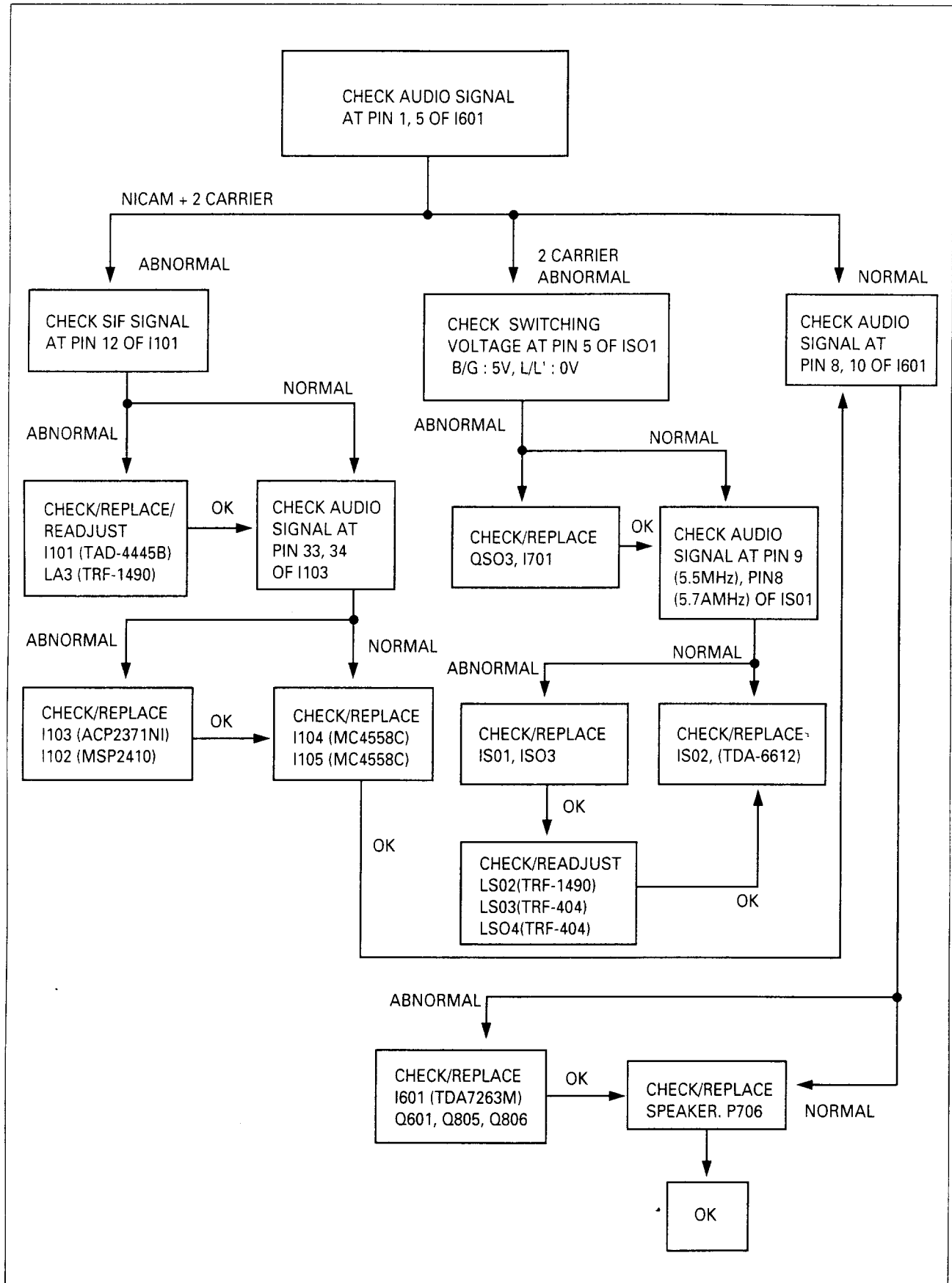
■ NO SPECIFIC COLOR



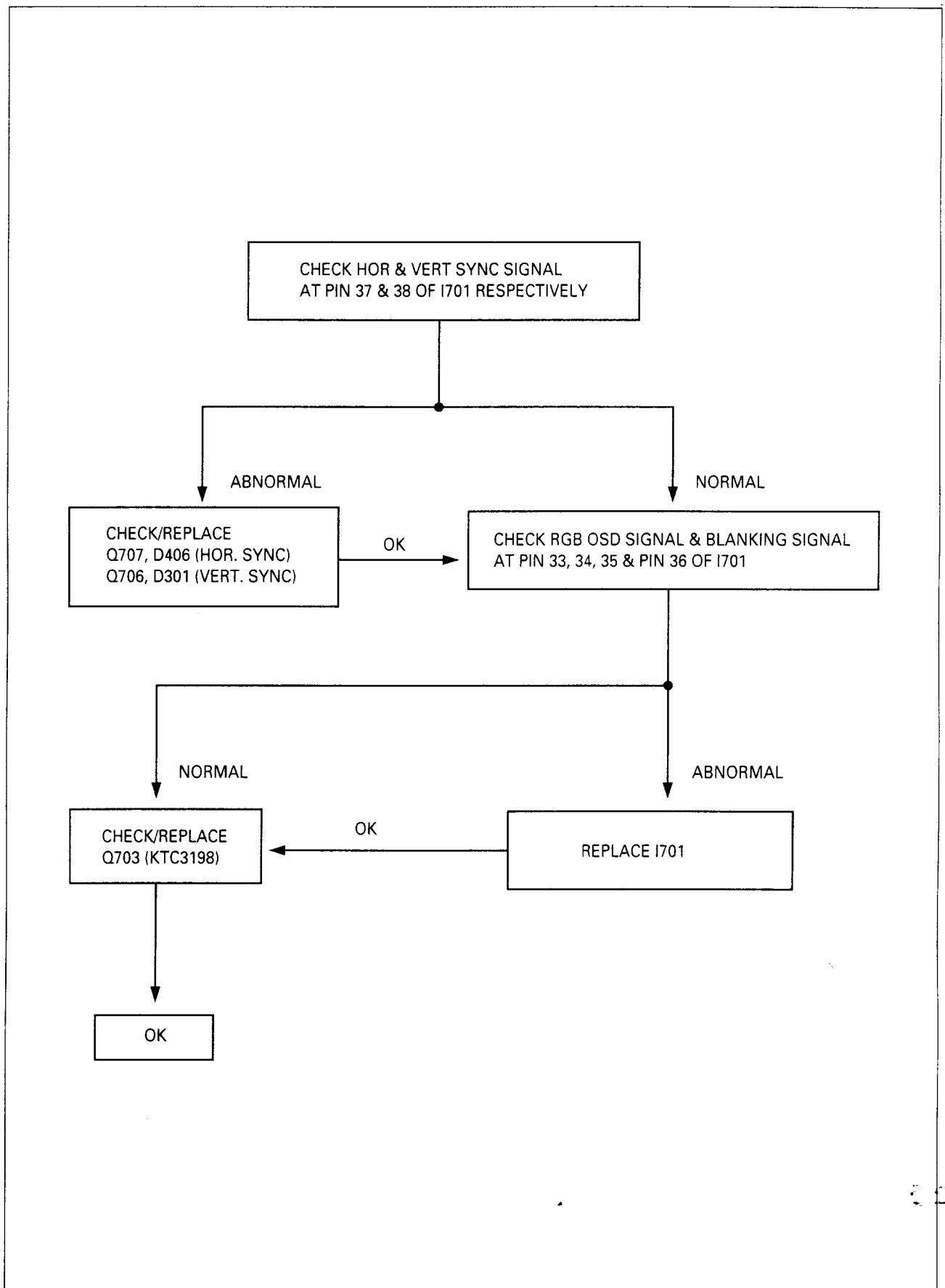
■ NO EXTERNAL AV



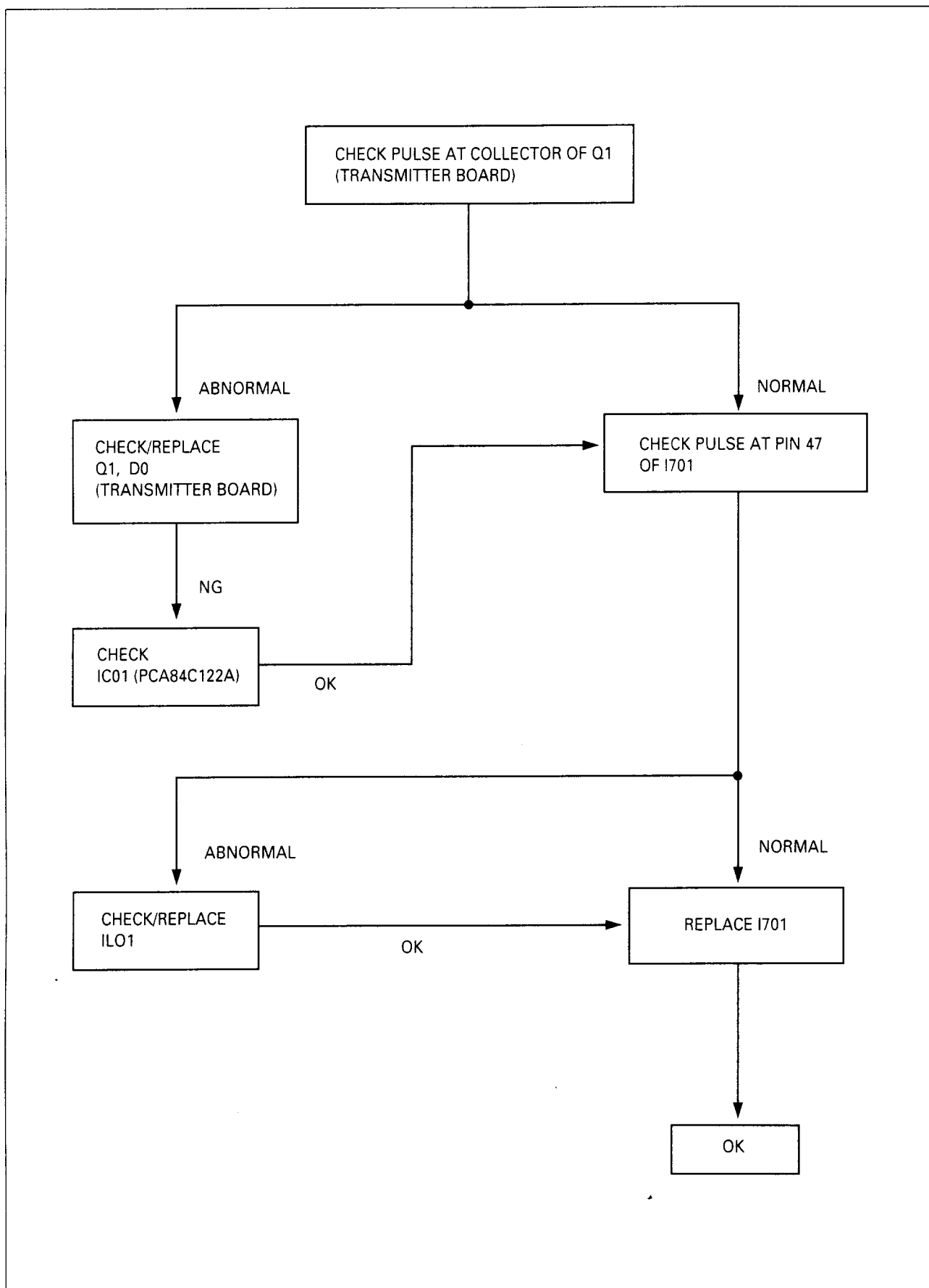
■ NO SOUND (PICTURE OK)



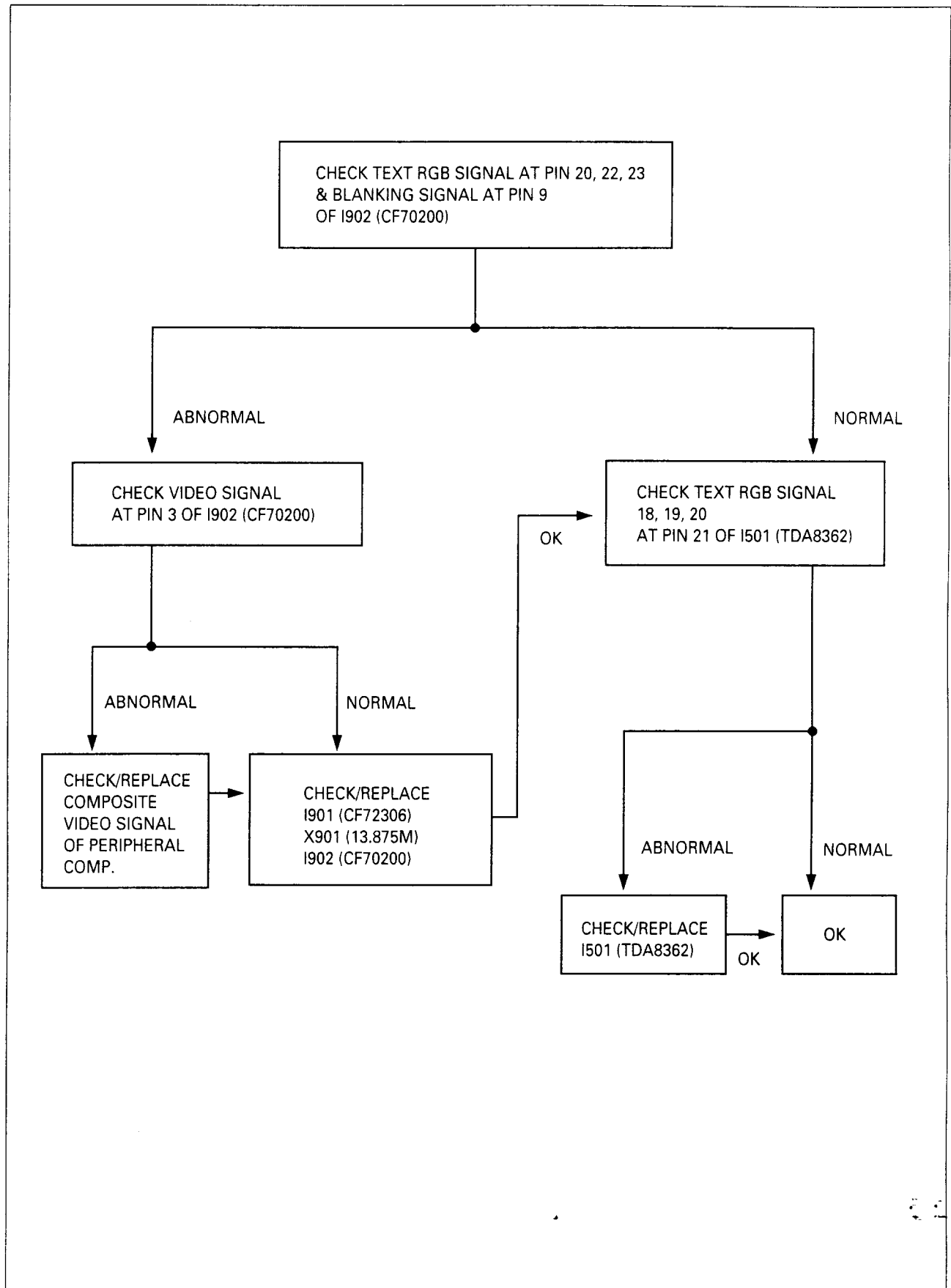
■ ON-SCREEN DISPLAY



■ REMOTE CONTROL TROUBLE (LOCAL CONTROL OK)



■ NO TELETEXT



■ REPLACEMENT PARTS LIST

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|------|-----------|-----------|------------------|--------|
|------|-----------|-----------|------------------|--------|

■ ACCESSORY AS

| | | | | |
|--|------------|---------------------|--------------------------|--|
| | 4858213800 | BAG P.E | P.E FILM T0.05X1150X1000 | |
| | 486A716200 | BATTERY | AAA | |
| | 48B2823A01 | TRANSMITTER REMOCON | R-23A01 | |
| | 48B2823A02 | TRANSMITTER REMOCON | R-23A02 | |
| | 48B2822A01 | TRANSMITTER REMOCON | R-22A01 | |
| | 48B2822A02 | TRANSMITTER REMOCON | R-22A02 | |

■ COVER BACK AS

| | | | | |
|------|------------|-------------|------------------------|--|
| M211 | 4852134500 | COVER BACK | FR HIPS BK | |
| M541 | 4855415800 | SPEC PLATE | 150ART P/E FILM (C/TV) | |
| M781 | 4857817610 | CLOTH BLACK | FELT T0.7 L = 300 | |

■ PACKTING AS

| | | | | |
|-------|------------|-----------------|--------------------------|--|
| M641 | 6520010100 | STAPLE PIN | 18M/M JDC | |
| M801 | 4858037100 | BOX CARTON | DW-3 | |
| M811 | 4858165300 | PAD | EPS | |
| M822 | 4858261300 | PE FILM | T0.02X1300X1000 C/TV20 | |
| 13100 | 58G0000074 | COIL DEGAUSSING | DC-2070 | |
| | 58G0000086 | COIL DEGAUSSING | DC-2050 | |
| 13200 | 4851900410 | CRT GROUND AS | 24/5/0.12-1560+AWG16-450 | |

■ CABINET AS

| | | | | |
|-------|------------|-------------------|----------------------|--------------|
| MC01 | 7128301011 | SCREW TAPPING | T2S WAS 3X10 MFZN | |
| M211A | 7122401411 | SCREW TAPPING | T2S TRS 4X14 MFZN | |
| M211B | 7122401411 | SCREW TAPPING | T2S TRS 4X14 MFZN | |
| M211C | 7122401411 | SCREW TAPPING | T2S TRS 4X14 MFZN | |
| M351 | 4853525501 | HOLDER CORD | HIPS GY | |
| M481 | 4854837402 | BUTTON POWER | ABS BK | |
| M481A | 4856717900 | SPRING | SWPA | |
| M491A | 7128301211 | XCREW TAPPING | T2S WAS 3X12 MFZN | |
| M681 | 4856812001 | TIE CABLE | NYLON66 DA100 | |
| P001 | 4851900120 | SPEAKER GROUND AS | DS-W1007-RC5R6M | |
| P002 | 4851900120 | SPEAKER GROUND AS | DS-W1007-RC5R6M | |
| P402A | 4850706057 | CONN AS | ODY-2109 | |
| SP01A | 7128301011 | SCREW TAPPING | T2S WAS 3X10 MFZN | |
| V901 | 4859605762 | CRT | A51JSW 90X40 | 21" ORION |
| V901 | 4859609461 | CRT | A51EER 11X40 | 21" SAMSUNG |
| V901 | 4859607660 | CRT | A51EAL 55X01 | 21" PHILIPS |
| V901 | 4859611260 | CRT | A48EEV 33X01 | 20" POLKOLOR |
| V901 | 4859609561 | CRT | A48ECR 11X16 | 20" SAMSUNG |
| V901 | 48A9642091 | CRT | A48JLL 90X | 20" ORION |
| V901A | 4856214800 | WASHER RUBBER | TMR-CA/NF BK T2 | |
| V901B | 4856213200 | WASHER CRT FIX | SK-5 B.K T1.2 | |
| V905A | 7391500011 | NUT HEX | 6N-1-5 MFZN | |
| 000AA | 4855802110 | LABEL WARNING | STICKER 100PX600X740 | |
| 000BB | 4859704500 | LABEL CRT BS | STICKER | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|------|-----------|-----------|------------------|--------|
|------|-----------|-----------|------------------|--------|

■ MASK FRONT AS

| | | | | |
|-------|------------|---------------|-------------------|--|
| M201 | 4852047001 | MASK FRONT | HIPS BK | |
| M251 | 4852525200 | GRILL R | EGI T0.5 | |
| M252 | 4852525100 | GRILL L | EGI T0.5 | |
| M331 | 4853311601 | RETAINER BACK | HIPS NC | |
| M341 | 4853414401 | BRKT CRT | ABS NC | |
| M341A | 7121401411 | SCREW TAPPING | T2S PAN 4X14 MFZN | |
| M551 | 4855519001 | DECO SENSOR | P.C SMOG | |
| M561 | 4855617500 | MARK BRAND | CU AU+ABS BK | |

■ SPEAKER AS

| | | | | |
|-------|------------|----------|---------------------------|--|
| PV01A | 4850703028 | CONN AS | YH025-03+YST025+USW = 200 | |
| PV02A | 4850703305 | CONN AS | YH025-03+YST025+USW = 700 | |
| SP01 | 4858304920 | SPEAK ER | 5W 8 CHM MSF-2D4SB53D | |

■ TERM ANT BOARD AS

| | | | | |
|-------|------------|---------------|---------------------|--|
| M361 | 4853624802 | TERMINAL ANT | MIPS BK | |
| M361A | 7128261011 | SCREW TAPPING | T2S WAS 2.6X10 MFZN | |
| 00010 | 4859002150 | PLUG PHONE AS | SPC+3C-2WS = 150MM | |

■ PCB LED AS (2195, 20C1 MODEL)

| | | | | |
|-------|------------|---------------|---------------------------|--|
| 21210 | 2193102005 | SOLDER BAR | SN PB=63 47 S63S-1320 | |
| 21220 | 2193011101 | SOLDER WIRE | RS 60-1.2 1.6A | |
| 21230 | 2291050301 | FLUX SOLVENT | ICAN/14KG H-302 | |
| 21240 | 2291050615 | FLUX SOLDER | KS-892M-1 | |
| 21250 | 2291140501 | WAX COVER | | |
| 21290 | 2291051001 | FLUX KILLER | KFT-7 | |
| A001 | 4859837723 | PCB CONTROL | T1.6X143X37(293X139/2X3) | |
| DL01 | DKLR114L-- | LED | KLR114L | |
| DL02 | DKLR114L-- | LED | KLR114L | |
| DL03 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| DL04 | DZPO6R2--- | DIODE ZENER | ZPD6.2 | |
| DL05 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| DL06 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| DL07 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| IL01 | 1SR9HP---- | IC PREAMP | SR-9HP | |
| IL01 | 1R0101DBK- | IC PREAMP | R01-01D (BK) | |
| M491 | 4854920701 | BUTTON | ABS BK | |
| M681 | 4856812001 | TIE CABLE | NYLON66 DA100 | |
| PL01A | 4850703306 | CONN AS | YH025-03+YST025+USW = 500 | |
| PL02 | 4850705020 | CONN AS | YH025-05+YST025+ULW = 500 | |
| PL03 | 4850706013 | CONN AS | YN025-06+YST025+ULW = 500 | |
| QL01 | TKTC3198Y- | TR | KTC3198Y | |
| QL02 | TKTC3198Y- | TR | KTC3198Y | |
| RL01 | RD-AZ472J- | R CARBON FILM | 1/6 4.7K OHM J | |
| RL02 | RD-AZ472J- | R CARBON FILM | 1/6 4.7K OHM J | |
| RL03 | RD-AZ391J- | R CARBON FILM | 1/6 390 OHM J | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|------|------------|---------------|------------------|--------|
| RL04 | RD-AZ391J- | R CARBON FILM | 1/6 390 OHM J | |
| SW01 | 5SB0101166 | SW TACT | KPT-1105A | |
| SW02 | 5SB0101166 | SW TACT | KPT-1105A | |
| SW03 | 5SB0101166 | SW TACT | KPT-1105A | |
| SW04 | 5SB0101166 | SW TACT | KPT-1105A | |
| SW05 | 5SB0101166 | SW TACT | KPT-1105A | |

■ PCB MAIN MANUAL AS

| | | | | |
|------|------------|---------------|----------------------------|------------------|
| C202 | CEXF1C471V | C ELECTRO | 16V RSS 470MF (10X12.5) TP | |
| C303 | CEYF1V102V | C ELECTRO | 35V RSS 1000MF (13X25) | |
| C307 | CEYF1V222V | C ELECTRO | 35V RSS 2200MF (16X31.5) | |
| C305 | CEYF1V222V | C ELECTRO | 35V RSS 220MF (1631.5) | |
| C402 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF | |
| C405 | CCYB3A222K | C CERA | 1KV B 2200PF K | |
| C407 | CMYH3C822J | C MYLAR | 1.6KV 8200PF J (BUP) | 20" S/S |
| C407 | CMYH3C692J | C MYLAR | 1.6KV 6900PF J | 21" PHILIPS, S/S |
| C407 | CMYH3C752J | C MYLAR | 1.6KV 7500PF J | 20" ORION |
| C408 | CMYH3C102J | C MYLAR | 2KV 1000PF J | 20" POLKOLOR |
| C408 | CMYH3C471J | C MYLAR | 2KV 470PF J | 20" ORION |
| C409 | CMYE2D474J | C MYLAR | 200V 0.47MF J (PL) | 20" S/S |
| C409 | CMYE2D154J | C MYLAR | 200V 0.15MF J | 20" ORION CRT |
| C409 | CMYE2D334F | C MYLAR | 200V 0.33MF J | 21" PHILIPS CRT |
| C409 | CMYE2D364J | C MYLAR | 200V 0.36MF J | 20" SAMSUNG CRT |
| C409 | CMYE2D394J | C MYLAR | 200V 0.39MF J | 21" ORION |
| C410 | CEYF2C330V | C ELECTRO | 160V RSS 32MF (13X20) | 21" SAMSUNG |
| C411 | CMYE2D104J | C MYLAR | 200V 0.1MF J (PL) | 20" POLKION |
| C412 | CCYB3A102V | C CERA | 1KV B 1000PF K | |
| C413 | CEYF1E471V | C ELECTRO | 25V RSS 470MF (10X20) | |
| C414 | CEYE2C330C | C ELECTRO | 160V RU 33MF (13X25) | |
| C416 | CEXE2E339A | C ELECTRO | 250V RS 3.3MF (8X16) | |
| C514 | CMXM2A224J | C MYLAR | 100V 0.22MF J | |
| C607 | CCYB3A102K | C CERA | 1KV B 1000PF K | |
| C610 | CEYF1V102V | C ELECTRO | 35V RSS 1000MF (13X25) | |
| C611 | CEYF1V102V | C ELECTRO | 35V RSS 1000MF (13X25) | |
| C630 | CEXF1V471V | C ELECTRO | 35V RSS 470MF (13X25) | |
| C709 | CEYF1C102V | C ELECTRO | 16V RSS 1000MF (10X20) | |
| C735 | CEYF1C102V | C ELECTRO | 16V RSS 1000MF (10X20) | |
| C801 | CL1JB3474K | C LINE ACROSS | AC250V 0.47MF 7/C/SNDF/SV | |
| C802 | CL1JB3474K | C LINE ACROSS | AC250V 0.47MF U/C/SNDF/SV | |
| C803 | CCYF3A472Z | C CERA | 1KV F 4700PF Z | |
| C804 | CCYF3A472Z | C CERA | 1KV F 4700PF Z | |
| C805 | CCYF3A472Z | C CERA | 1KV F 4700PF Z | |
| C806 | CCYF3A472Z | C CERA | 1KV F 4700PF Z | |
| C807 | CEYM2G121T | C ELECTRO | 400V LWF 120MF (25X50) | |
| C808 | CCYB3A271K | C CERA | 1KV B 270PF K | |
| C809 | CMYH3C122J | C MYLAR | BUP 1.6KV 1200PF J | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|-------|------------|---------------|--------------------------|----------------|
| C815 | MYB2G822J | C MYLAR | 400V 8200PF J (ED) | |
| C818 | CH1FFF103M | C CERA AC | AC400V 10000PF F DE7150 | |
| C 819 | CH1FFF103M | C CERA AC | AC400V 10000PF F DE77150 | |
| C820 | CCYB3A102K | C CERA | 1KV B 1000PF K | |
| C823 | CEYF1C102V | C ELECTRO | 16V RSS 1000MF (10X20) | |
| C824 | CEYF2C101C | C ELECTRO | 160V RUS 100MF (16X25) | |
| C850 | CEYE2C330C | C ELECTRO | 160V RCI 33MF (13X25) | |
| C904 | CEYF1V102C | C ELECTRO | 35V RUS 1000MF (13X25) | |
| D403 | DBYW95C--- | DIODE | BYW95C | |
| D601 | DBYW95C--- | DIODE | BYW95C | |
| D703 | 1UPC574J-- | IC | UPC574J | |
| D801 | DRBV408--- | DIODE BRIDGE | RBV-408 | |
| D809 | DBYW95C--- | DIODE | BYW95C | |
| F801 | 5FSCB4022R | FUSE CERA | SEMKO F4AH 4A 250V MF51 | |
| F801C | 4857621200 | INSU COVER | PCV T1.0 94V-0 | |
| I301 | 1AN5515--- | IC | AN5515 | |
| I301A | 4857024601 | HEAT SINK | AL EX | |
| I301B | 7121300811 | SCREW TAPPING | T25 PAN 3X8 MFZN | |
| I401 | IL7812CV-- | IC REGULATOR | L7812CV | |
| I401A | 4857024900 | HEAT SINK | AL EX | |
| I401B | 7121301011 | SCREW TAPPING | T2S PAN 3X10 MFZN | |
| I402 | 1KA7808--- | IC REGULATOR | KA7808 | |
| I403 | 1MC7805C-- | IC REGULATOR | MC7805C(KA7805) | |
| I403A | 4857024902 | HEAT SINK | AL EX | |
| I403B | 7121300811 | SCREW TAPPING | T2S PAN 3X8 MFZN | |
| I501 | 1TDA8362B- | IC | TDA83628 | TF, TS, TK, TU |
| I501 | 1TDA8362-- | IC | TDA8362 | VA |
| I502 | 1TDA4661-- | IC | TDA4661 | |
| I503 | 1TDA8395-- | IC | TDA8395 | TK, VA |
| I504 | 1LA7950--- | IC | LA-7950 | TK |
| I601 | 1TDA7263M- | IC | TDA7263M | |
| I601A | 4857024405 | HEAT SINK | AL EX | |
| I601B | 7271301011 | SCREW TAPTITE | TT3 PAN 3X10 MFZN | |
| I701 | 1DW167ST02 | IC MICOM | TM73C167A | |
| I702 | 1K1A7042P- | IC SWITCH | KIA7042P | |
| I703 | 1CAT24CO8P | IC | CAT24CO8P | |
| I710 | 1SN7686INJ | IC | SN7686INJ-12 | |
| I801 | 1TDA4601-- | IC | TDA4601 | |
| I801A | 4857025401 | HEAT SINK | A1050P-J24 T2 | |
| I801B | 4856012310 | SCREW SPECTAL | PAN 3X10 MFZN | |
| I801C | 4856215200 | WASHER | SPCC | |
| I801D | 7392300011 | NUT HEX | 6N-2-3 MFZN | |
| I801L | 4855801719 | LABEL WARNING | STICKER 50X10 | |
| I803 | 1MC7805C-- | IC REGULATOR | MC7805C(KA7805) | |
| I803A | 4857024900 | HEAT SINK | AL EX | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|-------|------------|----------------------|--------------------------|--|
| I803B | 7121301011 | SCREW TAPPING | T2S PAN 3X10 MFZN | 20" POLKOLAR 21" PILIPS 20" S/S WF 20",21" ORION 21"S/S wF |
| I901 | 1CF72306-- | IC | CF72306 | |
| I902 | 1CF70200-- | IC | CF70200NW | |
| I903 | 1K1A70420- | IC SWITCH | KIA7042P | |
| JW02 | WP-1BL201Y | WIRE LEAD 1007 | #22 1/0.65 BL 5F-200-5 | |
| LF801 | 5PLF303--- | FILTER LINE | LF-303 | |
| LF802 | 5PLF3544B- | FILTER LINE | LF-3544B | |
| L103 | 58C9780027 | COIL CHOKE | TRF-1201B (0.97 UH) | |
| L401 | 58C0000026 | COIL BEAD | HC-4035 | |
| L402 | 58H0000020 | COIL LINEARITY | L-76(76.5 UH) | |
| L402 | 58H0000034 | COIL LINEARITY | L-62 | |
| L402 | 58H0000016 | COIL LINEARITY | L-102 | |
| L403 | 58C9430599 | COIL CHOKE | AZ-9004Y (94MH) | |
| L707 | 58B38R9061 | COIL PIF | TRF-1444P | |
| L802 | 58C0000026 | COIL BEAD | HC-4035 | |
| L803 | 58C0000026 | COIL BEAD | HC-4035 | |
| L805 | 58C0000026 | COIL BEAD | HC-4035 | |
| L808 | 58C4500079 | COIL CHOKE | L-45 | |
| M721 | 4857235400 | SHIELD CASE | SPTH-C T0.25 | |
| PL01 | 4859231620 | CONN WAFER | YW025-03 | |
| PL02 | 4859231820 | CONN WAFER | YW025-05 | |
| PL03 | 4859231920 | CONN WAFER | YW025-06 | |
| PS01 | 4859200401 | SOCKET RGB | SR-21A1 (ANGLE TYPE) | |
| PS02 | 4859200401 | SOCKET RGB | SR-21A1 (ANGLE TYPE) | |
| PV03 | 4859231720 | CONN WAFER | YW025-04 | |
| PV04 | 4859231720 | CONN WAFER | YW025-04 | |
| PV05 | 4859231720 | CONN WAFER | YW025-04 | |
| P301 | 4859231620 | CONN WAFER | YW025-03 | |
| P401 | 4859231620 | CONN WAFER | YW025-03 | |
| P402 | 4859240120 | CONN WAFER | YFW500-06 | |
| P501 | 4859231820 | CONN WAFER | YW025-05 | |
| P801 | 4859242220 | CONN WAFER | YFW800-02 | |
| P801A | 4859904110 | CORD POWER AS | CW3201/250V 5A+HOUS=2500 | |
| P801A | 4859903110 | CORD POWER AS | CW4232/250V 5A | |
| P801A | 4859901419 | CORD POWER AS | KKP419L/250 TA | |
| A0001 | 4859904811 | CORD POWER | CW3201 H03VVH2F L-2500 | |
| A0002 | 4855801619 | LABEL WARNING | PAPER 93X44 | |
| P802 | 4859242220 | CONN WAFER | YFW800-02 | |
| P805 | 4859231620 | CONN WAFER | YW025-03 | |
| Q102 | TKTC3197-- | TR | KTC 3197 | |
| Q403 | T2SD1555-- | TR | 2SD1555 | |
| Q403A | 4857024502 | HEAT SINK | AL EX | |
| Q403B | 4856012312 | SCREW SPECIAL | PAN 3X12 MFZN | |
| Q403C | 7392300011 | NUT HEX | 6N-2-3 MFZN | |
| Q403D | 4856215201 | WASHER | SPCC | |

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TS, TK, VA

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|-------|------------|----------------|---------------------------|-------------------------|
| Q801 | T2SD1555-- | TR | 2SD1555 | |
| Q801A | 4857024502 | HEAT SINK | AL EX | |
| Q801B | 4856012312 | SCREW SPECIAL | PAN 3X12 MFZN | |
| Q801C | 7392300011 | NUT HEX | 6N-2-3 MFZN | |
| Q801D | 4856215201 | WASHER | SPCC | |
| R307 | RF02Y159J- | R FUSTBLE | 2W 1.5 OHM J | |
| R401 | RS02Y153J- | R M-OXIDE FILM | 2W 15K OHM J | |
| R402 | RS02Y153J- | R M-OXIDE FILM | 2W 15K OHM J | |
| R404 | RS02Y512J- | R M-OXIDE FILM | 2W 5.1K OHM J | |
| R405 | RS02Y512J- | R M-OXIDE FILM | 2W 5.1K OHM J | |
| R406 | RS02Y561J- | R M-OXIDE FILM | 2W 560 OHM J | |
| R410 | RF02Y159J- | R FUSIBLE | 2W 1.5 OHM J | |
| R413 | RF02Y109J- | R FUSIBLE | 2W 1 OHM J | |
| R414 | RF01Y689JA | R FUSIBLE | 1W 6.8 OHM J CURVE | 20" ORION |
| R414 | RF026279JA | R FUSIBLE | 2W 2.7 OHM J | 21" ORION, S.S. PHILIPS |
| R456 | RS01Y473J- | R M-OXIDE FILM | 1W 47K OHM J | 20" S/S, POLKOLAR |
| R711 | RS02Y562J- | R M-OXIDE FILM | 2W 5.6K OHM J | TF, TS, VA, TU |
| R801 | D262BF140M | POSISTOR | PTH451C262BF140M270 | 21" |
| R801 | D202BF180N | POSISTOR | PTH451C202BG180N270 | 20" |
| R802 | DB59346P20 | POSISTOR | B59346-A1502-P20 | |
| R804 | RS02Y272J- | R M-OXIDE FILM | 2W 2.7K OHM J | |
| R807 | RS01Y688JS | R M-OXIDE FILM | 1W 0.68 OHM J SMALL | |
| R817 | RS02Y101J- | R M-OXIDE FILM | 2W 100 OHM J | |
| R820 | RX058360JE | R CEMENT | 5W 36 OHM J BENCH 12.5MM | |
| R824 | RF01Y109J- | R FUSIBLE | 1W 1 OHM J | |
| R825 | RS02Y104J- | R M-OXIDE FILM | 2W 100K OHM J | |
| R832 | RF02Y109J- | R FUSIBLE | 2W 1 OHM J | |
| R833 | RF02Y279J- | R FUSIBLE | 2W 2.7 OHM J | |
| R851 | RX10B339JK | R CEMENT | 10W 3.3 OHM J BENCH 25MM | |
| R903 | RF02Y109J- | R FUSIBLE | 2W 1 OHM J | |
| SF01 | 5PJ3950M-- | FILTER SAW | J3950M | TU |
| SF01 | 5PG3962M-- | FILTER SAW | G3962M | |
| SW801 | 5S40102073 | SW PUSH | ME-7 1C 2P | |
| T401 | 50D0000022 | TRANS DRIVE | HD-15D | |
| T402 | 50H0000124 | FBT | FSA17013M | 20" S/S, 21" PHILIPS |
| T402 | 50H0000142 | FBT | FSA26012M | POLKOLAR |
| T402 | 50H0000120 | FBT | DCF-2217J | 20" POLKOLAR |
| T402 | 50H0000124 | FBT | DCF-2217L | 20" ORION |
| T801 | 50M0000083 | TRANS SMPS | TSM-4402 | 21" ORION |
| VT101 | 4859710330 | TUNER VARACTOR | DET7BZ | TU |
| VT101 | 4859709130 | TUNER VARACTOR | VTSS7SZ3 | TK |
| VT101 | 4859709830 | TUNER VARACTOR | TEKE4-073A | TF, VA, TS |
| X501 | 5XE4R4336E | CRYSTAL QUARTZ | HC-49/U 4.433619MHZ 30PPM | |
| X502 | 5XE3R5820C | CRYSTAL QUARTZ | 3.58MHZ | TK |
| X701 | 5XE6R0000C | CRYSTAL QUARTZ | HC-49/U 6.0000MHZ 20PPM | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|------|------------|----------------|---------------------------|--------|
| X901 | 5XE13R875E | CRYSTAL QUARTZ | HC-49/U 13.87500MHZ 30PPM | |
| Y801 | 5SC0101003 | SW RELAY | DG12D1-0M 1C-1P | |

■ PCB CHIP MOUNT AS

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|-------|------------|-------------|------------------------|--|
| CC101 | HCFK103ZCA | C CHIP CERA | Y5V 50V 0.01MF Z 2012 | |
| CC102 | HCFK103ZCA | C CHIP CERA | Y5V 50V 0.01MF Z 2012 | |
| CC103 | CHFK103ZCA | C CHIP CERA | Y5V 50V 0.01MF Z 2012 | |
| CC104 | HCFK103ZCA | C CHIP CERA | Y5V 50V 0.01MF Z 2012 | |
| CC105 | HCQK221JCA | C CHIP CERA | 50V CH 220PF J 2012 | |
| CC107 | HCFK103ZCA | C CHIP CERA | Y5V 50V 0.01MF Z 2012 | |
| CC108 | HCBK223KCA | C CHIP CERA | X7R 40V 0.022MF K 2012 | |
| CC109 | HCBK223KCA | C CHIP CERA | X7R 50V 0.022MF K 2012 | |
| CC110 | HCFK104ZCA | C CHIP CERA | Y5V 50V 0.1MF Z 2012 | |
| CC111 | HCBK223KCA | C CHIP CERA | X7R 50V 0.022MF K 2012 | |
| CC112 | HCBK392KCA | C CHIP CERA | X7R 50V 3900PF K 2012 | |
| CC115 | HCBK472KCA | C CHIP CERA | X7R 50V 4700PF K 2012 | |
| CC116 | HCBK222KCA | C CHIP CERA | X7R 50V 2200PF K 2012 | |
| CC118 | HCFK103ZCA | C CHIP CERA | Y5V 50V 0.01MF Z 2012 | |
| CC119 | HCFK103ZCA | C CHIP CERA | Y5V 50V 0.01MF Z 2012 | |
| CC120 | HCFK103ZCA | C CHIP CERA | Y5V 50V 0.01MF Z 2012 | |
| CC201 | HCFK104ZCA | C CHIP CERA | Y5V 50V 0.1MF Z 2012 | |
| CC251 | HCFK683ZCA | C CHIP CERA | Y5V 50V 0.068MF Z 2012 | |
| CC252 | HCBK153KCA | C CHIP CERA | X7R 50V 0.015MF K 2012 | |
| CC253 | HCFK104ZCA | C CHIP CERA | Y5V 50V 0.1MF Z 2012 | |
| CC254 | HCFK103ZCA | C CHIP CERA | Y5V 50V 0.01MF Z 2012 | |
| CC255 | HCQK100DCA | C CHIP CERA | 50V CH 10PF D 2012 | |
| CC256 | HCBK222KCA | C CHIP CERA | X7R 50V 2200PF K 2012 | |
| CC257 | HCFK104ZCA | C CHIP CERA | Y5V 50V 0.1MF Z 2012 | |
| CC302 | HCBK222KCA | C CHIP CERA | X7R 50V 2200PF K 2012 | |
| CC304 | HCBK102KCA | C CHIP CERA | X7R 50V 1000PF K 2012 | |
| CC401 | HCBK222KCA | C CHIP CERA | X7R 50V 2200PF K 2012 | |
| CC501 | HCFK104ZCA | C CHIP CERA | Y5V 50V 0.1MF Z 2012 | |
| CC502 | HCQK181JCA | C CHIP CERA | 50V CH 180PF J 2012 | |
| CC503 | HCBK472KCA | C CHIP CERA | X7R 50V 4700PF K 2012 | |
| CC504 | HCQK160JCA | C CHIP CERA | CH 50V 16PF J 2012 | |
| CC505 | HCQK180JCA | C CHIP CERA | 50V CH 18PF J 2012 | |
| CC510 | HCFK103ZCA | C CHIP CERA | Y5V 50V 0.01MF Z 2012 | |
| CC665 | HCFK103ZCA | C CHIP CERA | Y5V 50V 0.01MF Z 2012 | |
| CC666 | HCFK103ZCA | C CHIP CERA | Y5V 50V 0.01MF Z 2012 | |
| CC667 | HCFK103ZCA | C CHIP CERA | Y5V 50V 0.01MF Z 2012 | |
| CC668 | HCFK103ZCA | C CHIP CERA | Y5V 50V 0.01MF Z 2012 | |
| CC669 | HCFK103ZCA | C CHIP CERA | Y5V 50V 0.01MF Z 2012 | |
| CC701 | HCQK150JCA | C CHIP CERA | CH50V 15PF J 2012 | |
| CC702 | HCQK150JCA | C CHIP CERA | CH 50V 15PF J 2012 | |
| CC703 | HCFX104ZCA | C CHIP CERA | Y5V 50V 0.1MF Z 2012 | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|-------|------------|-------------|-----------------------|--------|
| CC704 | HCQK220JCA | C CHIP CERA | 50V CH 22PF J 2012 | |
| CC705 | HCFK104ZCA | C CHIP CERA | Y5V 50V 0.1MF Z 2012 | |
| CC706 | HCQK220JCA | C CHIP CERA | 50V CH 22PF J 2012 | |
| CC707 | HCQK271JCA | C CHIP CERA | 50V CH 270PF J 2012 | |
| CC708 | HCQK271JCA | C CHIP CERA | 50V CH 270PF J 2012 | |
| CC709 | HCFK103ZCA | C CHIP CERA | Y5V 50V 0.01MF Z 2012 | |
| CC710 | HCBK102KCA | C CHIP CERA | X7R 50V 1000PF K 2012 | |
| CC711 | HCBK102KCA | C CHIP CERA | X7R 50V 1000PF K 2012 | |
| CC712 | HCBK102KCA | C CHIP CERA | X7R 50V 1000PF K 2012 | |
| CC713 | HCBK102KCA | C CHIP CERA | X7R 50V 1000PF K 2012 | |
| CC714 | HCFK103ZCA | C CHIP CERA | Y5V 50V 0.01MF Z 2012 | |
| CC750 | HCBK102KCA | C CHIP CERA | X7R 50V 1000PF K 2012 | |
| CC777 | HCFK104ZCA | C CHIP CERA | Y5V 50V 0.1MF Z 2012 | |
| CC801 | HCQK101JCA | C CHIP CERA | 50V CH 100PF J2012 | |
| CC901 | HCQK150JCA | C CHIP CERA | 50V CH 15PF J 2012 | |
| CC902 | HCQK150JCA | C CHIP CERA | 50V CH 15PF J 2012 | |
| CC903 | HCQK221JCA | C CHIP CERA | 50V CH 220PF J 2012 | |
| CC904 | HCQK221JCA | C CHIP CERA | 50V CH 220PF J 2012 | |
| CC906 | HCFK104ZCA | C CHIP CERA | Y5V 50V 0.1MF Z 2012 | |
| CC907 | HCQK271JCA | C CHIP CERA | 50V CH 270PF J 2012 | |
| CC908 | HCFK103ZCA | C CHIP CERA | Y5V 50V 0.1MF Z 2012 | |
| CC909 | HCFK103ZCA | C CHIP CERA | Y5V 50V 0.1MF Z 2012 | |
| JC02 | HRFT000-CA | R CHIP | 1/10 0 OHM 2012 | |
| JC03 | HRFT000-CA | R CHIP | 1/10 0 OHM 2012 | |
| JC04 | HRFT000-CA | R CHIP | 1/10 0 OHM 2012 | |
| JC05 | HRFT000-CA | R CHIP | 1/10 0 OHM 2012 | |
| JC06 | HRFT000-CA | R CHIP | 1/10 0 OHM 2012 | |
| JC08 | HRFT000-CA | R CHIP | 1/10 0 OHM 2012 | |
| JC09 | HRFT000-CA | R CHIP | 1/10 0 OHM 2012 | |
| JC10 | HRFT000-CA | R CHIP | 1/10 0 OHM 2012 | |
| JC12 | HRFT000-CA | R CHIP | 1/10 0 OHM 2012 | |
| JC15 | HRFT000-CA | R CHIP | 1/10 0 OHM 2012 | |
| JC16 | HRFT000-CA | R CHIP | 1/10 0 OHM 2012 | |
| JC19 | HRFT000-CA | R CHIP | 1/10 0 OHM 2012 | |
| JC21 | HRFT000-CA | R CHIP | 1/10 0 OHM 2012 | |
| JC30 | HRFT000-CA | R CHIP | 1/10 0 OHM 2012 | |
| RC103 | HRFT472JCA | R CHIP | 1/10 4.7K OHM J 2012 | |
| RC104 | HRFT221JCA | R CHIP | 1/10 220 OHM J 2012 | |
| RC105 | HRFT122JCA | R CHIP | 1/10 1.2K OHM J 2012 | |
| RC107 | HRFT682JCA | R CHIP | 1/10 6.8K OHM J 2012 | |
| RC108 | HRFT333JCA | R CHIP | 1/10 33K OHM J 2012 | |
| RC109 | HRFT222JCA | R CHIP | 1/10 2.2K OHM J 2012 | |
| RC110 | HRFT682JCA | R CHIP | 1/10 6.8K OHM J 2012 | |
| RC111 | HRFT473JCA | R CHIP | 1/10 47K OHM J 2012 | |
| RC112 | HRFT304JCA | R CHIP | 1/10 300K OHM J 2012 | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|-------|------------|-----------|----------------------|--------|
| RC114 | HRFT471JCA | R CHIP | 1/10 470 OHM J 2012 | |
| RC115 | HRFT472JCA | R CHIP | 1/10 4.7K OHM J 2012 | |
| RC116 | HRFT393JCA | R CHIP | 1/10 39K OHM J 2012 | |
| RC118 | HRFT225JCA | R CHIP | 1/10 2.2M OHM J | |
| RC120 | HRFT101JCA | R CHIP | 1/10 100 OHM J 2012 | |
| RC121 | HRFT183JCA | R CHIP | 1/10 18K OHM J 2012 | |
| RC123 | HRFT122JCA | R CHIP | 1/10 1.2K OHM J 2012 | |
| RC124 | HRFT391JCA | R CHIP | 1/10 390 OHM J 2012 | |
| RC159 | HRFT472JCA | R CHIP | 1/10 4.7K OHM J 1012 | |
| RC162 | HRFT102JCA | R CHIP | 1/10 1K OHM J 2012 | |
| RC202 | HRFT102JCA | R CHIP | 1/10 1K OHM J 2012 | |
| RC210 | HRFT123JCA | R CHIP | 1/10 12K OHM J 2012 | |
| RC212 | HRFT102JCA | R CHIP | 1/10 1K OHM J 2012 | |
| RC240 | HRFT102JCA | R CHIP | 1/10 1K OHM J 2012 | |
| RC250 | HRFT123JCA | R CHIP | 1/10 12K OHM J 2012 | |
| RC251 | HRFT754JCA | R CHIP | 1/10 750K OHM J 2012 | |
| RC252 | HRFT102JCA | R CHIP | 1/10 1K OHM J 2012 | |
| RC253 | HRFT103JCA | R CHIP | 1/10 10K OHM J 2012 | |
| RC260 | HRFT472JCA | R CHIP | 1/10 4.7K OHM J 2012 | |
| RC261 | HRFT223JCA | R CHIP | 1/10 22K OHM J 2012 | |
| RC262 | HRFT333JCA | R CHIP | 1/10 33K OHM J2012 | |
| RC263 | HRFT103JCA | R CHIP | 1/10 10K OHM J 2012 | |
| RC264 | HRFT472JCA | R CHIP | 1/10 4.7K OHM J 2012 | |
| RC265 | HRFT223JCA | R CHIP | 1/10 22K OHM J 2012 | |
| RC267 | HRFT103JCA | R CHIP | 1/10 10K OHM J 2012 | |
| RC268 | HRFT224JCA | R CHIP | 1/10 220K OHM J 2012 | |
| RC274 | HRFT472JCA | R CHIP | 1/10 4.7K OHM J 2012 | |
| RC301 | HRFT562JCA | R CHIP | 1/10 5.6K OHM J 2012 | |
| RC303 | HRFT752JCA | R CHIP | 1/10 7.5K OHM J 2012 | |
| RC304 | HRFT153JCA | R CHIP | 1/10 15K OHM J 2012 | |
| RC308 | HRFT821JCA | R CHIP | 1/10 820 OHM J 2012 | |
| RC401 | HRFT153JCA | R CHIP | 1/10 15K OHM J 2012 | |
| RC403 | HRFT103JCA | R CHIP | 1/10 10K OHM J 2012 | |
| RC405 | HRFT472JCA | R CHIP | 1/10 4.7K OHM J 2012 | |
| RC473 | HRFT750JCA | R CHIP | 1/10 75 OHM J 2012 | |
| RC501 | HRFT104JCA | R CHIP | 1/10 100K OHM J 2012 | |
| RC502 | HRFT753JCA | R CHIP | 1/10 75K OHM J 2012 | |
| RC568 | HRFT303JCA | R CHIP | 1/10 30K OHM J 2012 | |
| RC601 | HRFT829JCA | R CHIP | 1/10 8.2 OHM J 2012 | |
| RC602 | HRFT829JCA | R CHIP | 1/10 8.2 OHM J 2012 | |
| RC603 | HRFT222JCA | R CHIP | 1/10 2.2K OHM J 2012 | |
| RC604 | HRFT181JCA | R CHIP | 1/10 180 OHM J 2012 | |
| RC605 | HRFT181JCA | R CHIP | 1/10 180 OHM J 2012 | |
| RC606 | HRFT222JCA | R CHIP | 1/10 2.2K OHM J 2012 | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|-------|------------|-----------|----------------------|--------|
| RC607 | HRFT222JCA | R CHIP | 1/10 2.2K OHM J 2012 | |
| RC608 | HRFT829JCA | R CHIP | 1/10 8.2 OHM J 2012 | |
| RC609 | HRFT829JCA | R CHIP | 1/10 8.2 OHM J 2012 | |
| RC610 | HRFT181JCA | R CHIP | 1/10 180 OHM J 2012 | |
| RC611 | HRFT181JCA | R CHIP | 1/10 180 OHM J 2012 | |
| RC612 | HRFT222JCA | R CHIP | 1/10 2.2K OHM J 2012 | |
| RC668 | HRFT750JCA | R CHIP | 1/10 75 OHM J 2012 | |
| RC669 | HRFT750JCA | R CHIP | 1/10 75 OHM J 2012 | |
| RC670 | HRFT750JCA | R CHIP | 1/10 180 OHM J 2012 | |
| RC671 | HRFT472JCA | R CHIP | 1/10 4.7K OHM J 2012 | |
| RC672 | HRFT472JCA | R CHIP | 1/10 4.7K OHM J 2012 | |
| RC701 | HRFT223JCA | R CHIP | 1/10 22K OHM J 2012 | |
| RC702 | HRFT912JCA | R CHIP | 1/10 9.1K OHM J 2012 | |
| RC703 | HRFT333JCA | R CHIP | 1/10 33K OHM J 2012 | |
| RC704 | HRFT333JCA | R CHIP | 1/10 33K OHM J 2012 | |
| RC705 | HRFT201JCA | R CHIP | 1/10 200 OHM J 2012 | |
| RC706 | HRFT472JCA | R CHIP | 1/10 4.7K OHM J 2012 | |
| RC708 | HRFT392JCA | R CHIP | 1/10 3.9K OHM J 2012 | |
| RC709 | HRFT152JCA | R CHIP | 1/10 1.5K OHM J 2012 | |
| RC710 | HRFT473JCA | R CHIP | 1/10 47K OHM J 2012 | |
| RC711 | HRFT223JCA | R CHIP | 1/10 22K OHM J 2012 | |
| RC712 | HRFT473JCA | R CHIP | 1/10 47K OHM J 2012 | |
| RC713 | HRFT472JCA | R CHIP | 1/10 4.7K OHM J 2012 | |
| RC714 | HRFT183JCA | R CHIP | 1/10 18K OHM J 2012 | |
| RC715 | HRFT103JCA | R CHIP | 1/10 10K OHM J 2012 | |
| RC717 | HRFT103JCA | R CHIP | 1/10 10K OHM J 2012 | |
| RC718 | HRFT332JCA | R CHIP | 1/10 3.3K OHM J 2012 | |
| RC719 | HRFT101JCA | R CHIP | 1/10 100 OHM J 2012 | |
| RC720 | HRFT101JCA | R CHIP | 1/10 100 OHM J 2012 | |
| RC721 | HRFT332JCA | R CHIP | 1/10 3.3K OHM J 2012 | |
| RC722 | HRFT101JCA | R CHIP | 1/10 100 OHM J 2012 | |
| RC723 | HRFT101JCA | R CHIP | 1/10 100 OHM J 2012 | |
| RC724 | HRFT102JCA | R CHIP | 1/10 1K OHM J 2012 | |
| RC725 | HRFT103JCA | R CHIP | 1/10 10K OHM J 2012 | |
| RC726 | HRFT102JCA | R CHIP | 1/10 1K OHM J 2012 | |
| RC727 | HRFT114JCA | R CHIP | 1/10 110K OHM J 2012 | |
| RC728 | HRFT823JCA | R CHIP | 1/10 82K OHM J 2012 | |
| RC729 | HRFT101JCA | R CHIP | 1/10 100 OHM J 2012 | |
| RC734 | HRFT102JCA | R CHIP | 1/10 1K OHM J 2012 | |
| RC741 | HRFT473JCA | R CHIP | 1/10 47K OHM J 2012 | |
| RC742 | HRFT473JCA | R CHIP | 1/10 47K OHM J 2012 | |
| RC744 | HRFT473JCA | R CHIP | 1/10 47K OHM J 2012 | |
| RC745 | HRFT473JCA | R CHIP | 1/10 47K OHM J 2012 | |
| RC746 | HRFT750JCA | R CHIP | 1/10 75 OHM J 2012 | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|-------|------------|-----------|----------------------|--------|
| RC748 | HRFT472JCA | R CHIP | 1/10 4.7K OHM J 2012 | |
| RC749 | HRFT473JCA | R CHIP | 1/10 47K OHM J 2012 | |
| RC751 | HRFT472JCA | R CHIP | 1/10 4.7K OHM J 2012 | |
| RC752 | HRFT103JCA | R CHIP | 1/10 10K OHM J 2012 | |
| RC753 | HRFT103JCA | R CHIP | 1/10 10K OHM J 2012 | |
| RC754 | HRFT103JCA | R CHIP | 1/10 10K OHM J 2012 | |
| RC755 | HRFT103JCA | R CHIP | 1/10 10K OHM J 2012 | |
| RC756 | HRFT103JCA | R CHIP | 1/10 10K OHM J 2012 | |
| RC757 | HRFT103JCA | R CHIP | 1/10 10K OHM J 2012 | |
| RC758 | HRFT103JCA | R CHIP | 1/10 10K OHM J 2012 | |
| RC759 | HRFT103JCA | R CHIP | 1/10 10K OHM J 2012 | |
| RC761 | HRFT132JCA | R CHIP | 1/10 1.3K OHM J 2012 | |
| RC762 | HRFT473JCA | R CHIP | 1/10 47K OHM J 2012 | |
| RC763 | HRFT104JCA | R CHIP | 1/10 100K OHM J 2012 | |
| RC764 | HRFT472JCA | R CHIP | 1/10 4.7K OHM J 2012 | |
| RC765 | HRFT103JCA | R CHIP | 1/10 10K OHM J 2012 | |
| RC771 | HRFT472JCA | R CHIP | 1/10 4.7K OHM J 2012 | |
| RC772 | HRFT561JCA | R CHIP | 1/10 560 OHM J 2012 | |
| RC773 | HRFT472JCA | R CHIP | 1/10 4.7K OHM J 2012 | |
| RC775 | HRFT681JCA | R CHIP | 1/10 680 OHM J 2012 | |
| RC777 | HRFT102JCA | R CHIP | 1/10 1K OHM J 2012 | |
| RC780 | HRFT750JCA | R CHIP | 1/10 75 OHM J 2012 | |
| RC801 | HRFT563JCA | R CHIP | 1/10 56K OHM J 2012 | |
| RC802 | HRFT102JCA | R CHIP | 1/10 1K OHM J 2012 | |
| RC803 | HRFT104JCA | R CHIP | 1/10 100K OHM J 2012 | |
| RC804 | HRFT102JCA | R CHIP | 1/10 1K OHM J 2012 | |
| RC806 | HRFT102JCA | R CHIP | 1/10 1K OHM J 2012 | |
| RC901 | HRFT103JCA | R CHIP | 1/10 10K OHM J 2012 | |
| RC902 | HRFT102JCA | R CHIP | 1/10 1K OHM J 2012 | |
| RC903 | HRFT123JCA | R CHIP | 1/10 12K OHM J 2012 | |
| RC904 | HRFT750JCA | R CHIP | 1/10 75 OHM J 2012 | |
| RC906 | HRFT750JCA | R CHIP | 1/10 75 OHM J 2012 | |
| RC907 | HRFT750JCA | R CHIP | 1/10 75 OHM J 2012 | |
| RC908 | HRFT750JCA | R CHIP | 1/10 75 OHM J 2012 | |

■ PCB MAIN RADIAL AS

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|------|------------|------------|------------------------|-------------------|
| C101 | CEXF1H470V | C ELECTRO | 50V RSS 47MF (6.3X11) | TU TF,TS,TK,VA |
| C102 | CEXE1H100A | C ELELCTRO | 50V RS 10MF (5X11) | |
| C103 | CEXE1H100A | C ELECTRO | 50V RS 10MF (5X11) | |
| C104 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| C105 | CEXF1E101V | C ELECTRO | 25V RSS 100MF (6.3X11) | |
| | CEXF1E100V | C ELECTRO | 25V RSS 10MF | |
| C106 | CEXF1H330V | C ELECTRO | RSS 50V 33MF (6.3X11) | |
| C107 | CEXE1H229A | C ELECTRO | 50V RS 2.2MF (5X11) | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|-------|------------|-----------|---------------------------|--------|
| C108 | CEXE1H109A | C ELECTRO | 50V RS 1MF (5X11) | |
| C109 | CEXE1M109A | C ELECTRO | 50V RS 1MF (5X11) | |
| C110 | CCXB1H102K | C CERA | 50V B 1000PF K (TAPPING) | |
| C121 | CMXM2A473J | C MYLAR | 100V 0.047MF J (TAPPING) | |
| C138 | CCXF1H103Z | C CERA | 50V F 0.01MF Z (TAPPING) | |
| C150 | CXCH1H100F | C CERA | 50V CH 10PF D (TAPPING) | |
| C204 | CEXE1H109A | C ELECTRO | 50V RS 1MF (5X11) | |
| C205 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| C206 | CEXE1H100A | C ELECTRO | 50V RS 10MF (5X11) | |
| C207 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| C208 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| C209 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| C250 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| C251 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| C301 | CMXM2A472J | C MYLAR | 100V 4700PF J (TAPPING) | |
| C302 | CCXB1H821K | C CERA | 50V B 820PF K (TAPPING) | |
| C305 | CCXB2H152K | C CERA | 500V B 1500PF K (TAPPING) | |
| C306 | CEXE1H100A | C ELECTRO | 50V RS 10MF (5X11) | |
| C308 | CMXM2A683J | C MYLAR | 100V 0.068MF J (TAPPING) | |
| C309 | CCXB2M102K | C CERA | 500V B 1000PF K (TAPPING) | |
| C401 | CEXE1M109A | C ELECTRO | 50V RS 1MF (5X11) | |
| C403 | CXSL2H1000 | C CERA | 500V SL 10PF D (TAPPING) | |
| C404 | CCXB2H471K | C CERA | 500V B 470PF K (TAPPING) | |
| C406 | CCXE2H472P | C CERA | 500V E 4700PF P (TAPPING) | |
| C415 | CCXB2H102K | C CERA | 500V B 1000PF K (TAPPING) | |
| C417 | CCX82H101K | C CERA | 50V B 100PF K (TAPPING) | |
| C418 | CEXE2C109C | C ELECTRO | 160V RU 1MF (8X11.5) | |
| C503 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| C504 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| C505 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| C 506 | CCXB1H102K | C CERA | 50V B 1000PF K (TAPPING) | |
| C507 | CCXB1H102K | C CERA | 50V B 1000PF K (TAPPING) | |
| C508 | CEXF1H220V | C ELECTRO | 50V RSS 22MF (5X11) TP | |
| C510 | CEXF1H470V | C ELECTRO | 50V RSS 47MF (6.3X11) | |
| C511 | CCXB1H472K | C CERA | 50V B 4700PF K (TAPPING) | |
| C512 | CEXF1H470V | C ELECTRO | 50V RSS 47MF (6.3X11) | |
| C513 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| C 601 | CMXM2A104J | C MYLAR | 100V 0.1 MF J (TAPPING) | |
| C602 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| C603 | CEXF1H470V | C ELECTRO | 50V RSS 47MF (6.3X11) | |
| C604 | CEXF1H101V | C ELECTRO | 25V RSS 100MF (6.3X11) | |
| C605 | CEXF1H470V | C ELECTRO | 50V RSS 47MF (6.3X11) | |
| C608 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| C609 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| C651 | CCXB1M102K | C MYLAR | 50V B 1000PF K (TAPPING) | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|-------|-------------|--------------|---------------------------|--------|
| C652 | CCXB1M102K | C MYLAR | 50V B 1000PF K (TAPPING) | |
| C670 | CMXM2A223J | C MYLAR | 100V 0.022MF J (TAPPING) | |
| C671 | CMXM2A223J | C MYLAR | 100V 0.022MF J (TAPPING) | |
| C701 | CCXB1M221K | C MYLAR | 50V B 220PF K (TAPPING) | |
| C702 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| C703 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| C704 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| C705 | CEXE1H479A | C ELECTRO | 50V RS 4.7 MF (5X11) | |
| C710 | CEXE1H100A | C ELECTRO | 50V RS 10MF (5X11) | |
| C711 | CEXF1H470V | C ELECTRO | 50V RSS 47MF (6.3X11) | |
| C713 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| C714 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| C718 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| C720 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| C721 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| C722 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| C726 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| C727 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| C728 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| C729 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| C731 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| C732 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| C733 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| C734 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| C736 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| C737 | CEXE1H220A | C ELECTRO | 50V RSS 22MF (5X11) | |
| C740 | CEXDIC220F | C ELECTRO | 16V RND 220μF | |
| C776 | CEXE1H100A | C ELECTRO | 50V RS 10MF (5X11) | |
| C777 | CEXFIC 470V | C ELECTRO | 16V RSS 47MF | |
| C779 | CEXD1H109F | C ELECTRO | 50V RND 1MF (5X11) | |
| C780 | CCXF1H103Z | C CERA | 50V F 0.01MF Z (TAPING) | |
| C789 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| C811 | CEXF1H101V | C ELECTRO | 50V RSS 100MF (8X11.5) | |
| C812 | CEXE1H109A | C ELECTRO | 50V RS 1MF (5X11) | |
| C813 | CEXF1H101V | C ELECTRO | 50V RSS 100MF (8X11.5) | |
| C814 | CMXM2A562J | C MYLAR | 100V 5600PF J (TAPPING) | |
| C817 | CEXF1H101V | C ELECTRO | 50V RSS 100MF (8X11.5) | |
| C821 | CCXB2H102K | C CERA | 500V B 1000PF K (TAPPING) | |
| C834 | CEXF1C101V | C ELECTRO | 16V RSS 100MF (6.3X11) | |
| C835 | CEXE1H100A | C ELECTRO | 50V RS 10MF (5X11) | |
| C840 | CBXF1H104Z | C CERA SEMI | 50V F 0.1MF Z (TAPPING) | |
| C903 | CEXE1H109A | C ELECTRO | 50V RS 1MF (5X11) | |
| F801A | 4857415001 | CLIP FUSE | PFC5000-0702 | |
| F801B | 4857415001 | CLIP FUSE | PFC5000-0702 | |
| L201 | 5CPX829K-- | COIL PEAKING | 8.2UH K RADIAL | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|-------|------------|--------------|---------------------|--------|
| L701 | 5CPX390K-- | COIL PEAKING | 39UH K RADIAL | |
| L804 | 5CPX109K-- | COIL PEAKING | PL 1 UH K (TAPPING) | |
| Q101 | TKTC3198Y- | TR | KTC3198Y | |
| Q113 | TKTC3198Y- | TR | XTC3198Y | |
| Q116 | TKTC3198Y- | TR | KTC3198Y | |
| Q117 | TKTC3198Y- | TR | KTC3198Y | |
| Q118 | TKTA1226Y- | TR | KTA1266Y | |
| Q202 | TKTC3198Y- | TR | KTC3198Y | |
| Q203 | TKTC3198Y- | TR | KTC3198Y | |
| Q204 | TKTC3198Y- | TR | KTC3198Y | |
| Q205 | TKTC3198Y- | TR | KTC3198Y | |
| Q210 | TKTA1226Y- | TR | KTA1266Y | |
| Q211 | TKTA1266Y- | TR | KTA1266Y | |
| Q212 | TKTA1266Y- | TR | KTA1266Y | |
| Q221 | TKTC3198Y- | TR | KTC3198Y | |
| Q250 | TKTC3198Y- | TR | KTC3198Y | |
| Q401 | TKTC3198Y- | TR | KTC3198Y | |
| Q402 | TKTC3207-- | TR | KTC3207 | |
| Q601 | TKTC3198Y- | TR | KTC3198Y | |
| Q610 | TKTC3198Y- | TR | KTC3198Y | |
| Q701 | TKTC3202Y- | TR | KTC3202Y | |
| Q702 | TKTC3202Y- | TR | KTC3202Y | |
| Q703 | TKTC3198Y- | TR | KTC3198Y | |
| Q704 | TKTC3198Y- | TR | KTC3198Y | |
| Q705 | TKTA1277Y- | TR | KTA1277Y | |
| Q706 | TKTC3198Y- | TR | KTC3198Y | |
| Q707 | TKTC3198Y- | TR | KTC3198Y | |
| Q709 | TKTA1266Y- | TR | KTA1266Y | |
| Q710 | TKTC3198Y- | TR | KTC3198Y | |
| Q711 | TKTC3198Y- | TR | KTC3198Y | |
| Q712 | TKTC3198Y- | TR | KTC3198Y | |
| Q803 | TKTC3198Y- | TR | KTC3198Y | |
| Q804 | TKTC3198Y- | TR | KTC3198Y | |
| Q805 | TKTA1266Y- | TR | KTA1266Y | |
| Q806 | TKTC3198Y- | TR | KTC3198Y | |
| VR101 | RV5426103P | R SEMI FIXED | RM0638C 10K OHM B | |
| VR201 | RV5426103P | R SEMI FIXED | RH0638C 10K OHM B | |
| VR301 | RV5426103P | R SEMI FIXED | RH0638C 10K OHM B | |
| VR302 | RV5426473P | R SEMI FIXED | RH0638C 47K OHM B | |
| VR401 | RV5426103P | R SEMI FIXED | RH0638C 10K OHM B | |
| VR801 | RV5426472P | R SEMI FIXED | RH0638C 10K OHM B | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|------|-----------|-----------|------------------|--------|
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■ PCB MAIN AXIAL AS

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|------|-------------|-------------|--------------|--|
| A001 | 4859809592 | PCB MAIN | T1.6X330X246 | |
| D101 | D1N4148--- | DIODE | 1N4148 | |
| D102 | D1N4148--- | DIODE | 1N4148 | |
| D201 | D1N4148--- | DIODE | 1N4148 | |
| D203 | D1N4148--- | DIODE | 1N4148 | |
| D204 | D1N4148--- | DIODE | 1N4148 | |
| D205 | D1N4148--- | DIODE | 1N4148 | |
| D209 | D1N4148--- | DIODE | 1N4148 | |
| D250 | D1N4148--- | DIODE | 1N4148 | |
| D252 | DZPD09R1--- | DIODE ZENER | ZPD 9.1 | |
| D301 | DZPD5R1--- | DIODE ZENER | ZPD5.1 | |
| D302 | DBYV95C--- | DIODE | BYV95C | |
| D303 | DBYV95C--- | DIODE | BYV95C | |
| D401 | DZPD8R2--- | DIODE ZENER | ZPD8.2 | |
| D402 | DBYV95C--- | DIODE | BYV95C | |
| D404 | DBYV95C--- | DIODE | BYV95C | |
| D405 | DBYV95C--- | DIODE | BYV95C | |
| D406 | DZPD5R1--- | DIODE ZENER | ZPD5.1 | |
| D407 | D1N4148--- | DIODE | 1N4148 | |
| D468 | D1N4148--- | DIODE | 1N4148 | |
| D506 | DZPD5R6--- | DIODE ZENER | ZPD 5.6 | |
| D561 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| D562 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| D651 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| D652 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| D653 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| D654 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| D655 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| D656 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| D657 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| D658 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| D659 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| D660 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| D661 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| D662 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| D663 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| D664 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| D704 | D1N4148--- | DIODE | 1N4148 | |
| D705 | D1N4148--- | DIODE | 1N4148 | |
| D708 | D1N4148--- | DIODE | 1N4148 | |
| D710 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| D711 | D1N4148--- | DIODE | 1N4148 | |
| D712 | DZPD12---- | DIODE ZENER | ZPD12 | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|------|------------|---------------|--------------------------|--|
| D714 | D1N4148--- | DIODE | 1N4148 | VA TU AV2 TU,TS TU TK |
| D727 | D1N4148--- | DIODE | 1N4148 | |
| D728 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| D729 | DZPD13---- | DIODE ZENER | ZPD-13 | |
| D730 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| D731 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| D732 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| D733 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| D734 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| D738 | D1N4148--- | DIODE | 1N4148 | |
| D741 | D1N4148--- | DIODE | 1N4148 | |
| D744 | D1N4148--- | DIODE | 1N4148 | |
| D746 | D1N4148--- | DIODE | 1N4148 | |
| D748 | D1N4148--- | DIODE | 1N4148 | |
| D750 | D1N4148--- | DIODE | 1N4148 | |
| D802 | DBYV95C--- | DIODE | BYV95C | |
| D804 | DBYV95C--- | DIODE | BYV95C | |
| D805 | DBYV95C--- | DIODE | BYV95C | |
| D806 | DBYV95C--- | DIODE | BYV95C | |
| D807 | DBYV95C--- | DIODE | BYV95C | |
| D810 | DBYV95C--- | DIODE | BYV95C | |
| D811 | D1N4148--- | DIODE | 1N4148 | |
| D812 | D1N4148--- | DIODE | 1N4148 | |
| D813 | D1N4148--- | DIODE | 1N4148 | |
| D901 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| JW01 | | WIRE JUMPER | | TK |
| J233 | 85801065GY | WIRE COPPER | AWG22 1/0.65 TIN COATING | VA |
| J234 | 85801065GY | WIRE COPPER | AWG22 1/0.65 TIN COATING | VA |
| J256 | 85801065GY | WIRE COPPER | AWG22 1/0.65 TIN COATING | TF, TK, VA |
| J282 | 85801065GY | WIRE COPPER | AWG22 1/0.65 TIN COATING | TS, TU |
| L301 | 58C100J091 | COIL CHOKE | AL04-100JJ (10MH) | TK VA VA TF, TK, VA TS, TU |
| L302 | 58C100J091 | COIL CHOKE | AL04-100JJ (10MH) | |
| L651 | 58C100J091 | COIL CHOKE | AL04-100JJ (10MH) | |
| L652 | 58C100J091 | COIL CHOKE | AL04-100JJ (10MH) | |
| L653 | 58C100J091 | COIL CHOKE | AL04-100JJ (10MH) | |
| L654 | 58C100J091 | COIL CHOKE | AL04-100JJ (10MH) | |
| L655 | 58C100J091 | COIL CHOKE | AL04-100JJ (10MH) | |
| L656 | 58C100J091 | COIL CHOKE | AL04-100JJ (10MH) | |
| L702 | 5CPZ100K02 | COIL PEAKING | 10UH 3.5MM K (L AL02TB) | |
| L703 | 5CPZ100K02 | COIL PEAKING | 10UH 3.5MM K (L AL02TB) | |
| L704 | 5CPZ100K02 | COIL PEAKING | 10UH 3.5MM K (L AL02TB) | |
| L705 | 5CPZ100K02 | COIL PEAKING | 100UH 3.5MM K (L AL02TB) | |
| R101 | RD-4Z335J- | R CARBON FILM | 1/4 3.3M OHM J | |
| R110 | RD-4Z225J- | R CARBON FILM | 1/4 2.2M OHM J | |
| R111 | RD-AZ820J- | R CARBON FILM | 1/6 82 OHM J | |
| R147 | RD-4Z820J- | R CARBON FILM | 1/4 82 OMH J | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|------|------------|---------------|------------------|--------|
| R211 | RD-AZ472J- | R CARBON FILM | 1/6 4.7K OHM J | |
| R212 | RD-4Z472J- | R CARBON FILM | 1/4 4.7K OHM J | |
| R213 | RD-4Z122J- | R CARBON FILM | 1/4 1.2K OHM J | |
| R215 | RD-4Z470J- | R CARBON FILM | 1/4 47 OHM J | |
| R216 | RD-AZ162J- | R CARBON FILM | 1/6 1.6K OHM J | |
| R217 | RD-AZ162J- | R CARBON FILM | 1/6 1.6K OHM J | |
| R218 | RD-AZ331J- | R CARBON FILM | 1/6 330 OHM J | |
| R220 | RD-AZ103J- | R CARBON FILM | 1/6 10K OHM J | |
| R221 | RD-4Z562J- | R CARBON FILM | 1/6 5.6K OHM J | |
| R301 | RD-4Z104J- | R CARBON FILM | 1/4 100K OHM J | |
| R302 | RD-2Z271J- | R CARBON FILM | 1/2 270 OHM J | |
| R303 | RD-4Z472J- | R CARBON FILM | 1/4 4.7K OHM J | |
| R304 | RD-AZ514J- | R CARBON FILM | 1/6 510K OHM J | |
| R305 | RD-2Z272J- | R CARBON FILM | 1/2 2.7K OHM J | |
| R306 | RD-2Z129J- | R CARBON FILM | 1/2 1.2 OHM J | |
| R308 | RD-4Z912J- | R CARBON FILM | 1/4 9.1K OHM J | |
| R309 | RD-4Z103J- | R CARBON FILM | 1/4 10K OHM J | |
| R310 | RD-4Z271J- | R CARBON FILM | 1/4 270 OHM J | |
| R311 | RD-4Z335J- | R CARBON FILM | 1/4 3.3M OHM J | |
| R312 | RD-AZ473J- | R CARBON FILM | 1/6 47K OHM J | |
| R403 | RD-4Z272J- | R CARBON FILM | 1/4 2.7K OHM J | |
| R407 | RD-2Z103J- | R CARBON FILM | 1/2 10K OHM J | |
| R408 | RD-2Z124J- | R CARBON FILM | 1/2 120K OHM J | |
| R409 | RD-4Z102J- | R CARBON FILM | 1/4 1K OHM J | |
| R415 | RD-2Z273J- | R CARBON FILM | 1/2 27K OHM J | |
| R416 | RD-4Z124J- | R CARBON FILM | 1/4 120K OHM J | |
| R418 | RD-4Z303J- | R CARBON FILM | 1/4 30K OHM J | |
| R451 | RD-4Z104J- | R CARBON FILM | 1/4 100K OHM J | |
| R452 | RD-AZ103J- | R CARBON FILM | 1/6 10K OHM J | |
| R453 | RD-4Z122J- | R CARBON FILM | 1/4 1.2K OHM J | |
| R454 | RD-4Z151J- | R CARBON FILM | 1/4 150 OHM J | |
| R455 | RD-AZ824J- | R CARBON FILM | 1/6 820K OHM J | |
| R504 | RD-4Z121J- | R CARBON FILM | 1/4 120 OHM J | |
| R553 | RD-4Z101J- | R CARBON FILM | 1/4 100 OHM J | |
| R555 | RD-AZ202J- | R CARBON FILM | 1/6 2K OHM J | |
| R556 | RD-AZ202J- | R CARBON FILM | 1/6 2K OHM J | |
| R557 | RD-AZ202J- | R CARBON FILM | 1/6 2K OHM J | |
| R701 | RD-4Z333J- | R CARBON FILM | 1/4 33K OHM J | |
| R702 | RD-AZ333J- | R CARBON FILM | 1/6 33K OHM J | |
| R704 | RD-AZ153J- | R CARBON FILM | 1/6 15K OHM J | |
| R705 | RD-AZ102J- | R CARBON FILM | 1/6 1K OHM J | |
| R706 | RD-4Z335J- | R CARBON FILM | 1/4 3.3M OHM J | |
| R707 | RD-4Z101J- | R CARBON FILM | 1/4 100 OHM J | |
| R708 | RD-4Z472J- | R CARBON FILM | 1/4 4.7K OHM J | |
| R709 | RD-4Z101J- | R CARBON FILM | 1/4 100 OHM J | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|------|------------|---------------|------------------|--------|
| R710 | RD-4Z472J- | R CARBON FILM | 1/4 4.7K OHM J | |
| R712 | RD-4Z472J- | R CARBON FILM | 1/4 4.7K OHM J | |
| R713 | RD-4Z102J- | R CARBON FILM | 1/4 1K OHM J | |
| R714 | RD-4Z474J- | R CARBON FILM | 1/4 470K OHM J | |
| R715 | RD-4Z474J- | R CARBON FILM | 1/4 470K OHM J | |
| R716 | RD-AZ331J- | R CARBON FILM | 1/6 330 OHM J | |
| R720 | RD-4Z470J- | R CARBON FILM | 1/4 47 OHM J | |
| R731 | RD-AZ472J- | R CARBON FILM | 1/6 4.7K OHM J | |
| R732 | RD-4Z472J- | R CARBON FILM | 1/4 4.7K OHM J | |
| R733 | RD-AZ331J- | R CARBON FILM | 1/6 330 OHM J | |
| R734 | RD-AZ620J- | R CARBON FILM | 1/6 62 OHM J | |
| R735 | RD-4Z102J- | R CARBON FILM | 1/4 1K OHM J | |
| R736 | RD-4Z470J- | R CARBON FILM | 1/4 47 OHM J | |
| R737 | RD-4Z472J- | R CARBON FILM | 1/4 4.7K OHM J | |
| R738 | RD-4Z562J- | R CARBON FILM | 1/4 5.6K OHM J | |
| R739 | RD-AZ472J- | R CARBON FILM | 1/6 4.7K OHM J | |
| R740 | RD-AZ472J- | R CARBON FILM | 1/6 4.7K OHM J | |
| R741 | RD-AZ750J- | R CARBON FILM | 1/6 75 OHM J | |
| R748 | RD-AZ472J- | R CARBON FILM | 1/6 4.7K OHM J | |
| R750 | RD-AZ472J- | R CARBON FILM | 1/6 4.7K OHM J | |
| R760 | RD-AZ122J- | R CARBON FILM | 1/6 1.2K OHM J | |
| R770 | RD-4Z562J- | R CARBON FILM | 1/4 5.6K OHM J | |
| R805 | RD-4Z302J- | R CARBON FILM | 1/4 3K OHM J | |
| R809 | RD-4Z122J- | R CARBON FILM | 1/4 1.2K OHM J | |
| R810 | RD-4Z153J- | R CARBON FILM | 1/4 15K OHM J | |
| R811 | RD-4Z103J- | R CARBON FILM | 1/4 10K OHM J | |
| R812 | RD-4Z221J- | R CARBON FILM | 1/4 220 OHM J | |
| R813 | RD-2Z154J- | R CARBON FILM | 1/2 150K OHM J | |
| R814 | RD-2Z124J- | R CARBON FILM | 1/2 120K OHM J | |
| R815 | RD-2Z124J- | R CARBON FILM | 1/2 120K OHM J | |
| R821 | RD-4Z270J- | R CARBON FILM | 1/4 27 OHM J | |
| R830 | RD-AZ103J- | R CARBON FILM | 1/6 10K OHM J | |
| R831 | RD-AZ473J- | R CARBON FILM | 1/6 47K OHM J | |
| R855 | RD-2Z154J- | R CARBON FILM | 1/2 150K OHM J | |
| R901 | RD-4Z101J- | R CARBON FILM | 1/4 100 OHM J | |
| R902 | RD-4Z472J- | R CARBON FILM | 1/4 4.7K OHM J | |
| R904 | RD-4Z102J- | R CARBON FILM | 1/4 1K OHM J | |

■ PCB A/V MANUAL AS

| | | | | |
|-------|------------|--------------|-----------------------|--|
| 30010 | 2193102005 | SOLDER BAR | SN PB=63 47 S63S-1320 | |
| 30020 | 2193011101 | SOLDER WIRE | RS 60-1.2 1.6A | |
| 30030 | 2291050301 | FLUX SOLVENT | 1CAN/14KG H-302 | |
| 30040 | 2291050615 | FLUX SOLDER | KS-892M-1 | |
| 30050 | 2291140501 | WAX COVER | | |
| 30090 | 2291051001 | FLUX KILLER | KFT-7 | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|-------|------------|----------------|-------------------------|-------------------|
| HV01 | 4859105240 | JACK PHONO | LGT1516-0100 | TV,TS,VA,TK TF |
| LV05 | 58C6R8J067 | COIL CHOKE | TRF-1015C (6.8UH J) | |
| LV06 | 58C6R8J067 | COIL CHOKE | TRF-1015C (6.8UH J) | |
| LV07 | 58C6R8J067 | COIL CHOKE | TRF-1015C (6.8UH J) | |
| M231 | 4852317601 | PANEL AV | MIPS BK | |
| M231A | 7128301011 | SCREW TAPPING | T2S WAS 3X10 MFZN | |
| M681 | 4856812001 | TIE CABLE | NYLON66 DA100 | |
| PV01 | 4859231620 | CONN WAFER | YW025-03 | |
| PV02 | 4859231620 | CONN WAFER | YW025-03 | |
| PV03A | 4850704019 | CONN AS | TH025-04+YST025+ULW=500 | |
| PV04A | 4850704035 | CONN AS | YH025-04+YST025+ULW=500 | |
| RV05A | 4850706068 | CONN AS | YH025-06+YST025+USW=500 | |
| PV05A | 4860706069 | CONN AS | YH025-06+YST025+USW=500 | |
| SV01 | 4859101940 | JACK S-VHS | YSC-SJ-1 | |
| VV01 | 4859102250 | JACK PIN BOARD | YSC03P-4120-115 | |

■ PCB A/V RADIAL AS

| | | | | |
|------|------------|--------|--------------------------|--|
| CV01 | CCXF1M103Z | C CERA | 50V F 0.01MF Z (TAPPING) | |
| CV02 | CCXF1M103Z | C CERA | 50V F 0.01MF Z (TAPPING) | |
| CV03 | CCXF1M103Z | C CERA | 50V F 0.01MF Z (TAPPING) | |
| CV04 | CCXF1M103Z | C CERA | 50V F 0.01MF Z (TAPPING) | |
| CV05 | CCXF1M103Z | C CERA | 50V F 0.01MF Z (TAPPING) | |
| CV06 | CCXF1M103Z | C CERA | 50V F 0.01MF Z (TAPPING) | |
| CV07 | CCXF1M103Z | C CERA | 50V F 0.01MF Z (TAPPING) | |
| CV08 | CCXF1M103Z | C CERA | 50V F 0.01MF Z (TAPPING) | |
| CV09 | CCXB1H102K | C CERA | 50V B 100PF K (TAPPING) | |
| CV10 | CCXF1M103Z | C CERA | 50VF 0.01MF Z (TAPPING) | |

■ PCB A/V AXIAL AS

| | | | | |
|------|------------|---------------|--------------------------|--|
| A001 | 4859837323 | PCB AV JACK | T1.6X104X48(210X174/2X3) | |
| DV01 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| DV02 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| DV03 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| DV04 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| DV05 | DZPD6R2--- | DIODE ZENER | ZPD6.2 | |
| LV02 | 58C100J091 | COIL CHOKE | AL04-100J (100MH) | |
| LV03 | 58C100J091 | COIL CHOKE | AL04-100J (100MH) | |
| LV04 | 58C100J091 | COIL CHOKE | AL04-100J (100MH) | |
| RV01 | RC-2Z101J- | R CARBON COMP | 1/2 100 OHM J | |
| RV02 | RC-2Z101J- | R CARBON COMP | 1/2 100 OHM J | |
| RV05 | RD-AZ473J- | R CARBON FILM | 1/6 47K OHM J | |
| RV07 | RD-AZ473J- | R CARBON FILM | 1/6 47K OHM J | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|------|-----------|-----------|------------------|--------|
|------|-----------|-----------|------------------|--------|

■ PCB NTCAM MANUAL AS

| | | | | |
|------|------------|----------------|----------------------------|--|
| I101 | 1TDA4445B- | IC | TDA4445B | |
| I102 | 1MSP2410-- | IC | MSP2410 | |
| I103 | 1ACP2371N1 | IC | ACP2371N1 | |
| I104 | 1KA4558--- | IC AMP | KA4558 | |
| I105 | 1KA4558--- | IC AMP | KA4558 | |
| I106 | 1K1A7042P- | IC SWITCH | KIA7042P | |
| LA3 | 58M38R9006 | COIL DET | TRF-1490 | |
| LA5 | 5CPX470J-- | COIL PEAKING | 47UH J RADIAL | |
| LA8 | 5CPX479K-- | COIL PEAKING | 4.7HH K RADIAL | |
| M722 | 4857235500 | SHIELD CASE | SPTH-C T0.5 | |
| PA01 | 4859274520 | CONN WAFER | YFAW025-120 | |
| SAW1 | 5PJ9250M-- | FILTER SAW | J9250M | |
| XA01 | 5XE18R432E | CRYSTAL QUARTZ | HC-49/U 18.43200 MHZ 30PPM | |

■ PCB NICAM RADIAL AS

| | | | | |
|------|------------|-------------|--------------------------|--|
| CA1 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| CA10 | CXCH1H470J | C CERA | 50V CH 47PF J (TAPPING) | |
| CA11 | CEXF1H470V | C ELECTRO | 50V RSS 47MF (6.3X11) | |
| CA12 | CXCH1H680J | C CERA | 50V CH 68PF J (TAPPING) | |
| CA13 | CCXF1H103Z | C CERA | 50V F 0.01MF Z (TAPPING) | |
| CA14 | CEXF1H470V | C ELECTRO | 50V RSS 47MF (6.3X11) | |
| CA17 | CMXM2A103J | C MYLAR | 100V 0.01MF J (TAPPING) | |
| CA18 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| CA19 | CMXB1H332J | C MYLAR | EU 50V 3300PF J | |
| CA2 | CEXE1H100A | C ELECTRO | 50V RS 10MF (5X11) | |
| CA20 | CCXB1H221K | C CERA | 50V B 220PF K (TAPPING) | |
| CA22 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| CA23 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| CA24 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| CA27 | CEXF1H330V | C ELELCTRO | RSS 50V 33MF 6.3X11 | |
| CA29 | CMXM2A103J | C MYLAR | 100V 0.01MF J (TAPPING) | |
| CA3 | CBXF1H104Z | C CERA SEMI | 50V F 0.1MF Z (TAPPING) | |
| CA30 | CEXE1H100A | C ELECTRO | 50V RS 10MF (5X11) | |
| CA31 | CCXF1H103Z | C CERA | 50V F 0.01MF Z (TAPPING) | |
| CA32 | CEXE1H100A | C ELECTRO | 50V RS 10MF (5X11) | |
| CA33 | CCXF1H103Z | C CERA | 50V F 0.01MF Z (TAPPING) | |
| CA34 | CMXM2A102J | C MYLAR | 100V 1000PF J (TAPPING) | |
| CA35 | CMXM2A102J | C MYLAR | 100V 1000PF J (TAPPING) | |
| CA36 | CEXF1H220V | C ELECTRO | 50V RSS 22MF (5X11) | |
| CA37 | CMXB1H222J | C MYLAR | EU 50V 2200PF J | |
| CA38 | CEXF1H220V | C ELELCTRO | 50V RSS 22MF (5X11) | |
| CA39 | CMXB1H222J | C MYLAR | EU 50V 2200PF J | |
| CA4 | CCXF1H103Z | C CERA | 50V F 0.01MF Z (TAPPING) | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|------|------------|--------------|--------------------------|--------|
| CA40 | CEXF1H220V | C ELECTRO | 50V RSS 22MF (5X11) | |
| CA41 | CCXF1H103Z | C CERA | 50V F 0.01MF Z (TAPPING) | |
| CA42 | CEXD1H339F | C ELECTRO | 50V RND 3.3MF (5X11) | |
| CA43 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| CA44 | CEXE1H470V | C ELECTRO | 50V RSS 47MF (6.3X11) | |
| CA45 | CEXE1H470V | C ELECTRO | 50V RSS 47MF (6.3X11) | |
| CA46 | CMXM2A153J | C MYLAR | 100V 0.015MF J (TAPPING) | |
| CA47 | CMXM2A153J | C MYLAR | 100V 0.015MF J (TAPPING) | |
| CA48 | CCXB1H681K | C CERA | 50V B 680PF K (TAPPING) | |
| CA49 | CCX81H681K | C CERA | 50V B 680 PF K (TAPPING) | |
| CA5 | CEXE1H100A | C ELECTRO | 50V RS 10MF (5X11) | |
| CA50 | CCXB1H68AK | C CERA | 50V B 680PF K (TAPPING) | |
| CA51 | CEXE1H339A | C ELECTRO | 50V RS 3.3MF (5X11) | |
| CA52 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| CA53 | CCXF1H103Z | C CERA | 50V F 0.01MF Z (TAPPING) | |
| CA54 | CEXE1H109A | C ELECTRO | 50V RS 1MF (5X11) | |
| CA55 | CEXE1H109A | C ELECTRO | 50V RS 1MF (5X11) | |
| CA57 | CCXB1H182K | C CERA | 50V B 1800PF K (TAPPING) | |
| CA58 | CCXB1H102K | C CERA | 50V 1000PF K (TAPPING) | |
| CA59 | CCXB1H182K | C CERA | 50V B 1800PF K (TAPPING) | |
| CA6 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| CA60 | CCXB1H102K | C CERA | 50V B 1000PF K (TAPPING) | |
| CA61 | CCXB1H182K | C CERA | 50V B 1800PF K (TAPPING) | |
| CA62 | CCXB1H102K | C CERA | 50V B 1000PF K (TAPPING) | |
| CA63 | CCXB1H182K | C CERA | 50V B 1800PF K (TAPPING) | |
| CA64 | CCXB1H102K | C CERA | 50V B 1000PF K (TAPPING) | |
| CA65 | CEXE1H100A | C ELECTRO | 50V RS 10MF (5X11) | |
| CA7 | CXCH1H1000 | C CERA | 50V CH 10PF D (TAPPING) | |
| CA8 | CXCH1H1000 | C CERA | 50V CH 10PF D (TAPPING) | |
| CA9 | CXCH1H470J | C CERA | 50V CH 47PF J (TAPPING) | |
| LA1 | 5CPX479K-- | COIL PEAKING | 4.7UH K RADIAL | |
| LA2 | 5CPX150J-- | COIL PEAKING | 15UH J RADIAL | |
| LA4 | 5CPX479K-- | COIL PEAKING | 4.7UH K RADIAL | |
| LA6 | 5CPX479K-- | COIL PEAKING | 4.7UH K RADIAL | |
| QA1 | TKTC3198Y- | TR | KTC3198Y | |
| QA2 | TKTC3198Y- | TR | KTC3198Y | |
| QA3 | TKTC3198Y- | TR | KTC3198Y | |
| QA4 | TKTC3198Y- | TR | KTC3198Y | |
| QA5 | TKTA1266Y- | TR | KTA1266Y | |
| QA6 | TKTC3198Y- | TR | KTC3198Y | |
| QA7 | TKTC3198Y- | TR | KTC31986 | |

■ PCB NICAM AXIAL AS

| | | | | |
|------|------------|-----------|--------------------------|--|
| A001 | 4859836523 | PCB NICAM | T1.6X110X85(220X197/2X2) | |
| DA1 | DIN4148--- | DIODE | 1N4148 | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|------|------------|---------------|------------------|--------|
| RA1 | RD-AZ27AJ- | R CARBON FILM | 1/6 270 OHM J | |
| RA10 | RD-AZ562J- | R CARBON FILM | 1/6 5.6K OHM J | |
| RA11 | RD-AZ562J- | R CARBON FILM | 1/6 5.6K OHM J | |
| RA12 | RD-AZ202J- | R CARBON FILM | 1/6 2K OHM J | |
| RA13 | RD-AZ202J- | R CARBON FILM | 1/6 2K OHM J | |
| RA14 | RD-AZ153J- | R CARBON FILM | 1/6 15K OHM J | |
| RA15 | RD-AZ153J- | R CARBON FILM | 1/6 15K OHM J | |
| RA16 | RD-AZ473J- | R CARBON FILM | 1/6 47K OHM J | |
| RA17 | RD-AZ472J- | R CARBON FILM | 1/6 4.7K OHM J | |
| RA18 | RD-AZ393J- | R CARBON FILM | 1/6 39K OHM J | |
| RA19 | RD-AZ114J- | R CARBON FILM | 1/6 110K OHM J | |
| RA2 | RD-AZ271J- | R CARBON FILM | 1/6 270 OHM J | |
| RA20 | RD-AZ393J- | R CARBON FILM | 1/6 39K OHM J | |
| RA21 | RD-AZ222J- | R CARBON FILM | 1/6 2.2K OHM J | |
| RA22 | RD-AZ182J- | R CARBON FILM | 1/6 1.8K OHM J | |
| RA23 | RD-AZ222J- | R CARBON FILM | 1/6 2.2K OHM J | |
| RA24 | RD-AZ432J- | R CARBON FILM | 1/6 4.3K OHM J | |
| RA25 | RD-AZ472J- | R CARBON FILM | 1/6 4.7K OHM J | |
| RA26 | RD-AZ104J- | R CARBON FILM | 1/6 100K OHM J | |
| RA27 | RD-AZ103J- | R CARBON FILM | 1/6 10K OHM J | |
| RA28 | RD-AZ203J- | R CARBON FILM | 1/6 20K OHM J | |
| RA29 | RD-AZ223J- | R CARBON FILM | 1/6 22K OHM J | |
| RA3 | RD-AZ271J- | R CARBON FILM | 1/6 270 OHM J | |
| RA30 | RD-AZ223J- | R CARBON FILM | 1/6 22K OHM J | |
| RA31 | RD-AZ103J- | R CARBON FILM | 1/6 10K OHM J | |
| RA32 | RD-AZ103J- | R CARBON FILM | 1/6 10K OHM J | |
| RA33 | RD-AZ103J- | R CARBON FILM | 1/6 10K OHM J | |
| RA34 | RD-AZ103J- | R CARBON FILM | 1/6 10K OHM J | |
| RA35 | RD-AZ103J- | R CARBON FILM | 1/6 10K OHM J | |
| RA36 | RD-AZ103J- | R CARBON FILM | 1/6 10K OHM J | |
| RA37 | RD-AZ103J- | R CARBON FILM | 1/6 10K OHM J | |
| RA38 | RD-AZ103J- | R CARBON FILM | 1/6 10K OHM J | |
| RA43 | RD-AZ223J- | R CARBON FILM | 1/6 22K OHM J | |
| RA5 | RD-AZ202J- | R CARBON FILM | 1/6 2K OHM J | |
| RA6 | RD-AZ223J- | R CARBON FILM | 1/6 22K OHM J | |
| RA7 | RD-AZ683J- | R CARBON FILM | 1/6 68K OHM J | |
| RA8 | RD-AZ101J- | R CARBON FILM | 1/6 100 OHM J | |
| RA9 | RD-AZ101J- | R CARBON FILM | 1/6 100 OHM J | |

■ PCB SOUND AMP MANUAL

| | | | | |
|------|-------------|-------|-----------|--|
| DS01 | D1S2186--- | DIODE | 1S2186 | |
| DS02 | D1S21856--- | DIODE | 1S2186 | |
| IS01 | 1TDA3866-- | IC | TDA3866 | |
| IS02 | 1TDA6612-- | IC | TDA6612-5 | |
| IS03 | 1TA8710S-- | IC | TA-8710S | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|-------|-------------|----------------|------------------|--------------------------------|
| LS02 | 58M38R9006 | COIL DET | TRF-1490 | TK, VA TU TF TS VA |
| LS03 | 58S5590040 | COIL SIF | TRF-404 | |
| LS04 | 58S5590040 | COIL SIF | TRF-404 | |
| M722 | 48577235500 | SHIELD CASE | SPTH-C T0.5 | |
| PA01 | 4859274520 | CONN WAFER | YFAW025-120 | |
| SFS01 | 5PK9260M-- | FILTER SAW | K9260M | |
| SFS01 | 5PJ9250M-- | FILTER SAW | J9250M | |
| SFS01 | 5PG9251M | FILTER SAW | G9251M | |
| SFS01 | TPG9251M | FILTER SAW | G9251M (NICAM) | |
| SFS02 | 5PL9461M-- | FILTER SAW | L9461M | |
| ST01 | 5PSFE60MB- | FILTER CERA | SFE 6.00MB | |
| ST02 | 5PSFE65MB- | FILTER CERA | SFE 6.5MB | |
| ST03 | 5PSFE55MB- | FILTER CERA | SFE 5.5MB | |
| ST04 | 5PSFE55MB- | FILTER CERA | SFE 5.5MB | |
| ST05 | 5PSFE574MC | FILTER CERA | SFE 5.74MC | |
| ST06 | 5PSFE574MC | FILTER CERA | SFE 5.74MC | |
| XS01 | 4850L00610 | RESONATOR CERA | CSB500E | |

■ PCB SOUND AMP RADIAL

| | | | | |
|------|------------|-----------|---------------------------|--|
| CS01 | CCXB1H471K | C CERA | 50V B 470PF K (TAPPING) | |
| CS02 | CCXB1H471K | C CERA | 50V B 470PF K (TAPPING) | |
| CS03 | CXCH1H510J | C CERA | 50V CH 51PF J (TAPPING) | |
| CS04 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| CS05 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| CS06 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| CS07 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| CS08 | CEXE1H470A | C ELECTRO | 50V RSS 47MF (6.3X11) | |
| CS09 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| CS10 | CCXB1H102K | C CERA | 50V B 1000PF K (TAPPING) | |
| CS11 | CXCH1H680J | C CERA | 50V CH 68PF J (TAPPING) | |
| CS12 | CXCH1H560J | C CERA | 50V CH 56PF J (TAPPING) | |
| CS13 | CCXF1M223Z | C CERA | 50V F 0.022MF Z (TAPPING) | |
| CS14 | CCXF1H103Z | C CERA | 50V F 0.01MF Z (TAPPING) | |
| CS15 | CCXF1H223Z | C CERA | 50V F 0.022MF Z (TAPPING) | |
| CS16 | CXCH1H680J | C CERA | 50V CH 68PF J (TAPPING) | |
| CS17 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| CS18 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| CS19 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| CS20 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| CS21 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| CS22 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| CS23 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| CS24 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| CS25 | CEXE1H479A | C ELECTRO | 50V RS 4.7MF (5X11) | |
| CS26 | CMXM2A473J | C MYLAR | 100V 0.047MF J (TAPPING) | |
| CS27 | CMXM2A473J | C MYLAR | 100V 0.047MF J (TAPPING) | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|-------|------------|--------------|--------------------------|--------|
| CS28 | CMXM2A682J | C MYLAR | 100V 6800PF J (TAPPING) | |
| CS29 | CMXM2A682J | C MYLAR | 100V 6800PF J (TAPPING) | |
| CS30 | CCXB1H222K | C CERA | 50V B 2200PF K (TAPPING) | |
| CS31 | CCXB1H681K | C CERA | 50V B 680PF K (TAPPING) | |
| CS32 | CMXM2A392J | C MYLAR | 100V 3900PF J (TAPPING) | |
| CS33 | CMXM2A104J | C MYLAR | 100V 0.1MF J (TAPPING) | |
| CS34 | CEXF1H470V | C ELECTRO | 50V RSS 47MF (6.3X11) | |
| CS35 | CEXE1H109A | C ELECTRO | 50V RS 1MF (5X11) | |
| CS36 | CEXE1H109A | C ELECTRO | 50V RS 1MF (5X11) | |
| CS37 | CMXM2A152J | C MYLAR | 100V 1500PF J (TAPPING) | |
| CS38 | CMXM2A152J | C MYLAR | 100V 1500PF J (TAPPING) | |
| CS39 | CCXB1H681K | C CERA | 50V B 680PF K (TAPPING) | |
| CS40 | CCXB1H681K | C CERA | 50V B 680PF K (TAPPING) | |
| LS01 | 5CPX330J-- | COIL PEAKING | 33UH J RADIAL | |
| LS05 | 5CPX392J-- | COIL PEAKING | 3900UH J RADIAL | |
| QS01 | TKTC3198Y- | TR | KTC3198Y | |
| QS02 | TKTC3198Y- | TR | KTC3198Y | |
| QS03 | TKTC3198Y- | TR | KTC3198Y | |
| VRS01 | RV5426472P | R SEMI FIXED | RH0638C 4.7K OHM B | |

■ PCB SOUND AMP AXIAL

| | | | | |
|------|------------|---------------|----------------|--|
| RS01 | RD-AZ102J- | R CARBON FILM | 1/6 1K OHM J | |
| RS02 | RD-AZ561J- | R CARBON FILM | 1/6 560 OHM J | |
| RS03 | RD-AZ561J- | R CARBON FILM | 1/6 560 OHM J | |
| RS04 | RD-AZ561J- | R CARBON FILM | 1/6 560 OHM J | |
| RS05 | RD-AZ103J- | R CARBON FILM | 1/6 10K OHM J | |
| RS06 | RD-AZ683J- | R CARBON FILM | 1/6 68K OHM J | |
| RS07 | RD-AZ103J- | R CARBON FILM | 1/6 10K OHM J | |
| RS09 | RD-AZ103J- | R CARBON FILM | 1/6 10K OHM J | |
| RS10 | RD-AZ223J- | R CARBON FILM | 1/6 22K OHM J | |
| RS11 | RD-AZ332J- | R CARBON FILM | 1/6 3.3K OHM J | |
| RS12 | RD-AZ202J- | R CARBON FILM | 1/6 2K OHM J | |
| RS13 | RD-AZ202J- | R CARBON FILM | 1/6 2K OHM J | |
| RS14 | RD-AZ202J- | R CARBON FILM | 1/6 2K OHM J | |
| RS15 | RD-AZ471J- | R CARBON FILM | 1/6 470 OHM J | |
| RS16 | RD-AZ103J- | R CARBON FILM | 1/6 10K OHM J | |
| RS17 | RD-AZ103J- | R CARBON FILM | 1/6 10K OHM J | |
| RS19 | RD-AZ563J- | R CARBON FILM | 1/6 56K OHM J | |
| RS20 | RD-AZ100J- | R CARBON FILM | 1/6 10K OHM J | |
| RS21 | RD-AZ100J- | R CARBON FILM | 1/6 10K OHM J | |

■ PCB CRT MANUAL AS

| | | | | |
|-------|------------|--------------|-----------------------|--|
| 50010 | 2193102005 | SOLDER BAR | 5N PB=63 47 S63S-1320 | |
| 50020 | 2193011101 | SOLDER WIRE | RS 60-1.2 1.6A | |
| 50030 | 2291050301 | FLUX SOLVENT | 1CAN/14KG H-302 | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|-------|------------|----------------|---------------------------|-----------------------------|
| 50040 | 2291050615 | FLUX SOLDER | KS-892M-1 | |
| 50050 | 2291140501 | WAX COVER | | |
| 50090 | 2291051001 | FLUX KILLER | KFT-7 | |
| C542 | CCYE3D103P | C CERA | 2KV E 0.01MF P | |
| C543 | CEYE2E100A | C ELECTRO | 250V RS 10MF (13X20) | |
| M681 | 4856812001 | TIE CABLE | NYLON66 DA100 | |
| M681 | 4856812001 | TIE CABLE | NYLON66 DA100 | |
| P402 | 4850708042 | CONN AS | YBH025-08+YBIT025+ULW=500 | |
| R501 | RS02Y123J- | R M-OXIDE FILM | 2W 12K OHM J | |
| R502 | RV6117103A | R SEMI FIXED | CET 117A 10K OHM B | |
| R505 | RV6117201A | R SEMI FIXED | CET 117A 200 OHM B | |
| R511 | RS02Y123J- | R M-OXIDE FILM | 2W 12K OHM J | |
| R512 | RV6117103A | R SEMI FIXED | CET 117A 10K OHM B | |
| R515 | RV6117201A | R SEMI FIXED | CET 117A 200 OHM B | |
| R521 | RS02Y123J- | R M-OXIDE FILM | 2W 12K OHM J | |
| R522 | RV6117103A | R SEMI FIXED | CET 117A 10K OHM B | |
| S901 | 4859301930 | SOCKET CRT | CVT3240-0501 | 21" POLKOLAR 21" SAMSUNG |
| S901 | 4859301530 | SOCKET CRT | ISM-01 | 20" ORION |
| S901 | 4859302030 | SCCKET CRT | ISM-03 | 21" ORION |

■ PCB CRT RADIAL AS

| | | | | |
|------|------------|-----------|--------------------------|--|
| C501 | CXCH1H221J | C CERA | 50V CH 220PF J (TAPPING) | |
| C503 | CCXB1H271K | C CERA | 50V B 270PF K (TAPING) | |
| C511 | CXCH1H221J | C CERA | 50V CH 220PF J (TAPPING) | |
| C513 | CCXB1271K | C CERA | 50V B 270 PF K (TAPPING) | |
| C521 | CXCH1H221J | C CERA | 50V CH 220PF J (TAPPING) | |
| C523 | CCXB1H271K | C CERA | 50V B 270PF K (TAPING) | |
| C541 | CEXF1C101V | C ELECTRO | 16V RSS 100MF (6.3X11) | |
| Q501 | TKTC3207-- | TP | KTC3207 | |
| Q502 | TKTA1266Y- | TR | KTA1266Y | |
| Q511 | TKTC3207-- | TR | KTC3207 | |
| Q512 | TKTA1266Y- | TR | KTA1266Y | |
| Q521 | TKTC3207-- | TR | KTC3207 | |
| Q522 | TKTA1266Y- | TR | KTA1266Y | |

■ PCB CRT AXIAL AS

| | | | | |
|------|------------|---------------|-------------------------|--|
| A001 | 4859809313 | PCB CRT | 51.6X89X80(269X195/3X2) | |
| R503 | RD-AZ152J- | R CARBON FILM | 1/6 1.5K OHM J | |
| R504 | RD-AZ241J- | R CARBON FILM | 1/6 240 OHM J | |
| R506 | RC-2Z332J- | R CARBON FILM | 1/2 3.3K OHM J | |
| R507 | RD-AZ560J- | R CARBON FILM | 1/6 56 OHM J | |
| R508 | RD-AZ471J- | R CARBON FILM | 1/6 470 OHM J | |
| R509 | RD-AZ101J- | R CARBON FILM | 1/6 100 OHM J | |
| R513 | RD-AZ152J- | R CARBON FILM | 1/6 1.5K OHM J | |
| R514 | RD-AZ241J- | R CARBON FILM | 1/6 240 OHM J | |

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|------|------------|---------------|------------------|--------|
| R516 | RC-2Z332J- | R CARBON FILM | 1/2 3.3K OHM J | |
| R517 | RD-AZ560J- | R CARBON FILM | 1/6 56 OHM J | |
| R518 | RD-AZ471J- | R CARBON FILM | 1/6 470 OHM J | |
| R519 | RD-AZ101J- | R CARBON FILM | 1/6 100 OHM J | |
| R523 | RD-AZ152J- | R CARBON FILM | 1/6 1.5K OHM J | |
| R524 | RD-AZ241J- | R CARBON FILM | 1/6 240 OHM J | |
| R525 | RD-AZ201J- | R CARBON FILM | 1/6 200 OHM J | |
| R526 | RC-2Z332J- | R CARBON FILM | 1/2 3.3K OHM J | |
| R527 | RD-AZ560J- | R CARBON FILM | 1/6 56 OHM J | |
| R528 | RD-AZ471J- | R CARBON FILM | 1/6 470 OHM J | |
| R541 | RD-AZ621J- | R CARBON FILM | 1/6 620 OHM J | |
| R542 | RD-AZ472J- | R CARBON FILM | 1/6 4.7K OHM J | |
| R543 | RD-AZ472J- | R CARBON FILM | 1/6 4.7K OHM J | |
| R544 | RD-AZ472J- | R CARBON FILM | 1/6 4.7K OHM J | |
| R550 | RD-AZ103J- | R CARBON FILM | 1/6 10K OHM J | |
| R551 | RD-AZ103J- | R CARBON FILM | 1/6 10K OHM J | |
| R552 | RD-AZ103J- | R CARBON FILM | 1/6 10K OHM J | |

■ PCB LED AS (2166Model, 65mmx34mm)

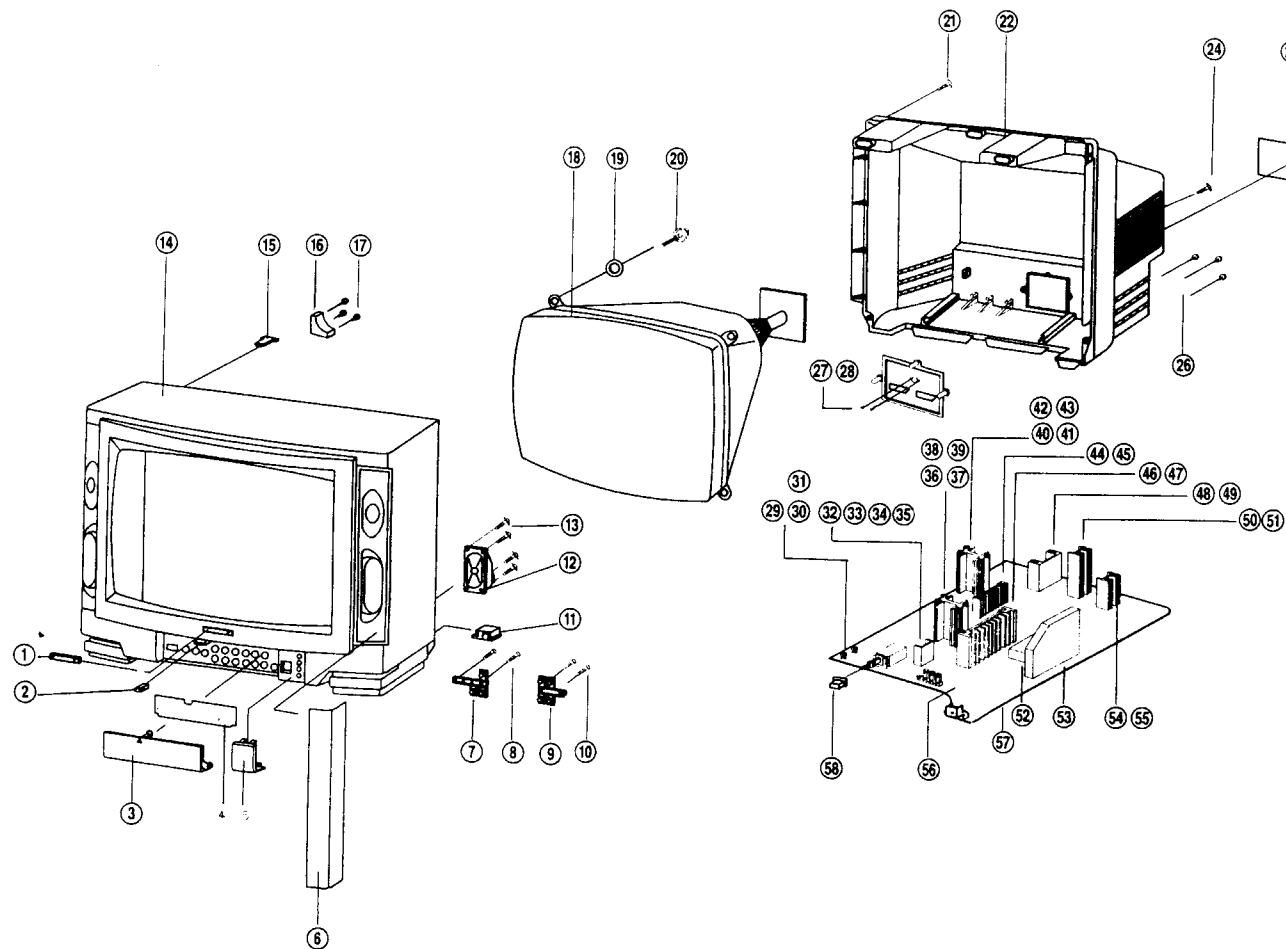
| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|------|------------|---------------|-------------------------|--------|
| DL01 | DKLR114L-- | LED | KLR114L | |
| DL02 | DKLR114L-- | LED | KLR114L | |
| PL02 | 4850705020 | CONN AS | TY025-05+YST025+ULW=500 | |
| QL01 | TKTC3198Y- | TR | KTC3198Y | |
| QL02 | TKTC3198Y- | TR | KTC3198Y | |
| RL01 | RD-AZ472J- | R CARBON FILM | 1/6 4.7K OHM J | |
| RL02 | RD-AZ472J- | R CARBON FILM | 1/6 4.7K OHM J | |
| RL03 | RD-AZ391J- | R CARBON FILM | 1/6 360 OHM J | |
| RL04 | RD-AZ391J- | R CARBON FILM | 1/6 360 OHM J | |

■ PCB LED AS (2075Model, 40mmx34mm)

| LOC. | PART-CODE | PART-NAME | PART-DESCRIPTION | REMARK |
|------|------------|---------------|------------------------|--------|
| DL01 | DKLR114L | LED | KLR114L | |
| DL02 | DKLR114L | LED | KLR114L | |
| DL02 | 4850705020 | CONN AS | YH025-05+YST05+ULW=500 | |
| QL01 | TKTC3198Y | TR | KTC3198Y | |
| QL02 | TKTC3198Y | TR | KTC3198Y | |
| RL01 | RD-AZ472J- | R CARBON FILM | 1/6 4.7K OHM J | |
| RL02 | RD-AZ472J- | R CARBON FILM | 1/6 4.7K OHM J | |
| RL03 | RD-AZ391J- | R CARBON FILM | 1/6 390 OHM J | |
| RL04 | RD-AZ391J- | R CARBON FILM | 1/6 390 OHM J | |

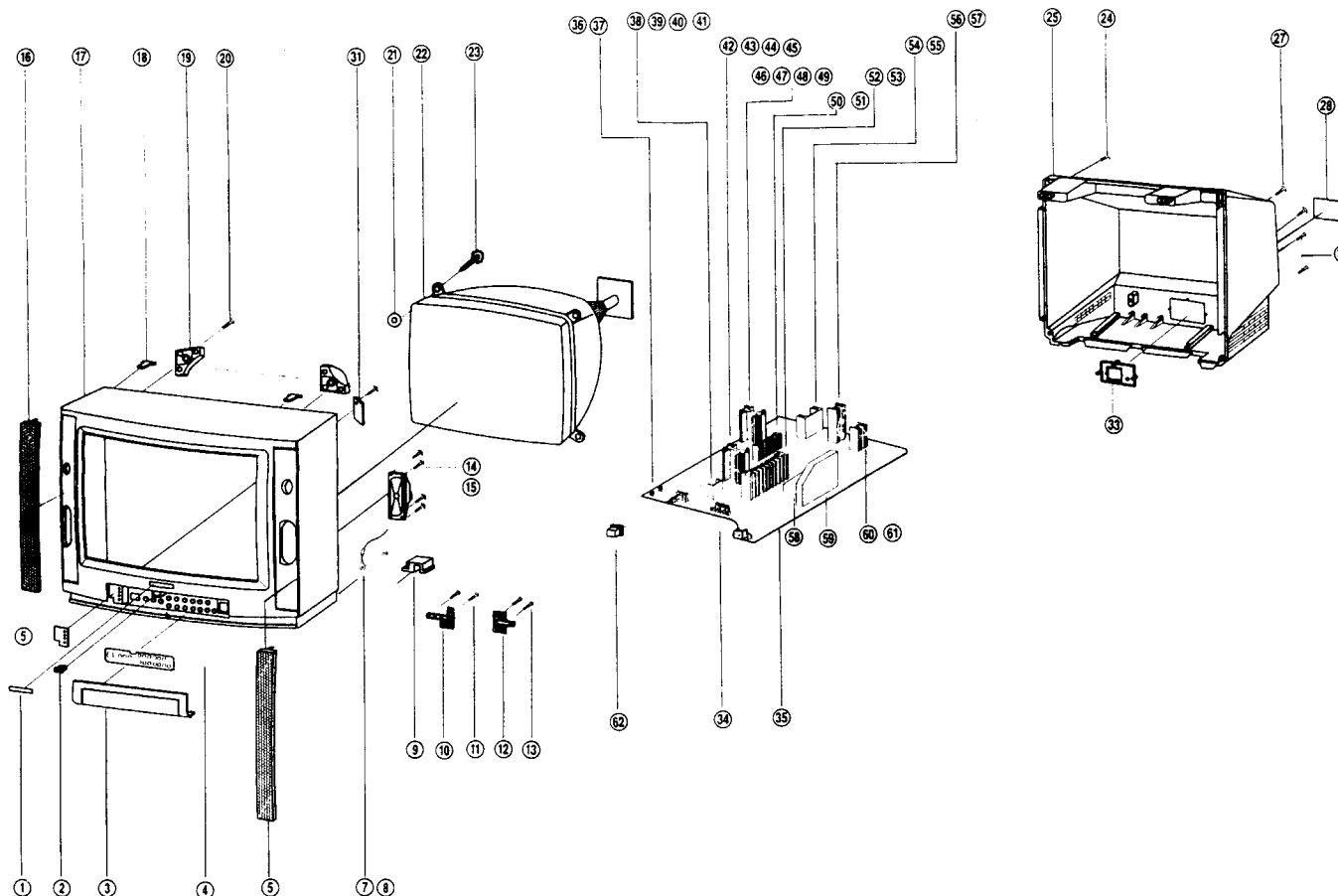
EXPLODED VIEW

DTT-2066



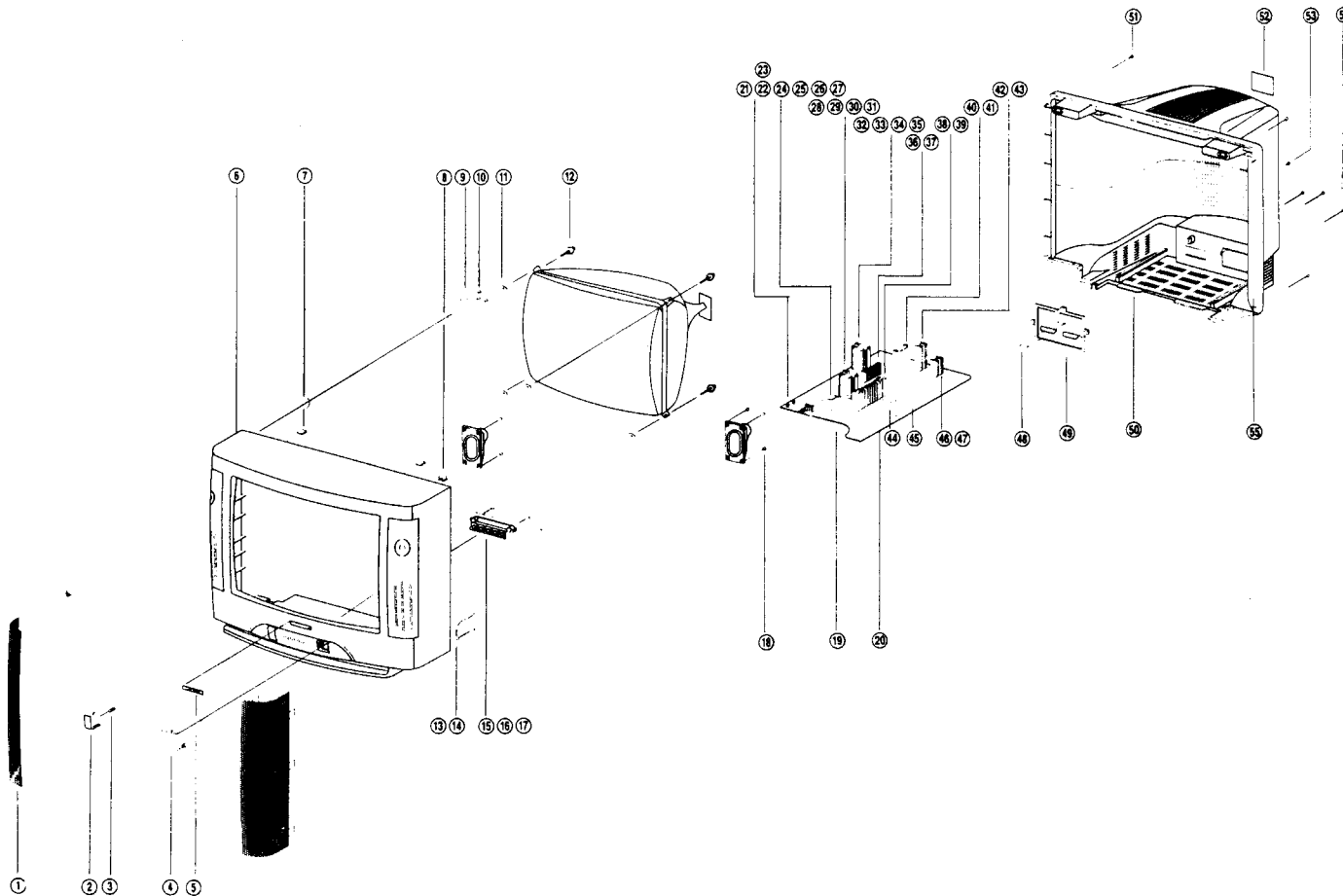
| NO. | PART CODE | PART NAME | Q'TY | DESCRIPTION | REMARK |
|-----|------------|-----------------|------|-----------------------|-----------|
| 1 | 4855615900 | MARK BRAND | 1 | A1050P-H24 T0.4 | |
| 2 | 4857923300 | DOOR LOCK | 1 | LA7010(DIFCO) | |
| 3 | 4852810701 | DOOR | 1 | ABS BK | |
| 4 | 4855050605 | DECO CTRL | 1 | PVC T0.25 | |
| 5 | 4855513803 | DECO SENSOR | 1 | P C DARK RED | |
| 6 | 4852519000 | GRILL | 2 | EGT0.8 BK | |
| 7 | 4854918610 | BUTTON CTRL 'B' | 1 | HG ABS BK | |
| 8 | 7128301011 | SCREW TAPPING | 2 | T2S WAS 3X10 MFZN | BUTON+M/F |
| 9 | 4854915802 | BUTTON | 1 | ABS BK | |
| 10 | 7128301011 | SCREW TAPPING | 2 | T2S WAS 3X10 MFZN | BUTON+M/F |
| 11 | 4853525501 | HOLDER CORD | 1 | HIPS GY | |
| 12 | 4858304020 | SPEAKER | 2 | | |
| 13 | 7128301211 | SCREW TAPPING | 8 | T2S WAS 3X12 MFZN | SPER +M/F |
| 14 | 4852040701 | MASK FRONT | 1 | HIPS BK | |
| 15 | 4853311801 | RETA BACK | 3 | HIPS NC | |
| 16 | 4853115001 | BRKT CRT | 4 | ABS BK | |
| 17 | 7121401611 | SCREW TAPPING | 12 | T2S PAN 4X16 MFZN | BUTON+M/F |
| 18 | 4859605660 | CRT | 1 | | |
| 19 | 4856215402 | WASHER RUBBER | 4 | TMR-CA/NF BK T2 | |
| 20 | 4856212000 | WASHER CRT FIX | 4 | SK-5 B.K T1.2 | |
| 21 | 7122401411 | SCREW TAPPING | 5 | T2S TRS 4X14 MFZN | MF+C/B |
| 22 | 4852129500 | COVER BACK | 1 | FR HIPS BK | |
| 23 | | | | | |
| 24 | 7122401411 | SCREW TAPPING | 1 | T2S TRS 4X14 MFZN | C/B+FBT |
| 25 | 4855415800 | SPEC PLATE | 1 | 150ART P/E FILM(C/TV) | |
| 26 | 7122401411 | SCREW TAPPING | 3 | T2S TRS 4X14 MFZN | BC+TERM |
| 27 | 4853624802 | TERMINAL ANT | 1 | HIPS BK | |
| 28 | 7128261011 | SCREW TAPPING | 2 | T2S PAN 3X8 MFZN | |
| 29 | 4857415001 | FUSE CLIP | 1 | PFC5000-0702 | |
| 30 | 4857415001 | FUSE CLIP | 1 | PFC5000-0702 | |
| 31 | 4857621200 | INSU COVER | 1 | PVC T1.0(94V-0) | |
| 32 | 4857025400 | HEAT SINK | 1 | AL EX | |
| 33 | 4857025400 | SCREW SPECIAL | 1 | PAN 3X10 MFZN | |
| 34 | 4856215200 | WASHER | 1 | SPCC | |
| 35 | 7392300011 | NUT HEX | 1 | 6N-2-3 MFZN | |
| 36 | 4857024502 | HEAT SINK | 1 | AL EX | |
| 37 | 4856012312 | SCREW SPECIAL | 1 | PAN 3X12 MFZN | |
| 38 | 4856215201 | WASHER | 1 | SPCC | |
| 39 | 7392300011 | NUT HEX | 1 | 6N-2-3 MFZN | |
| 40 | 4857024502 | HEAT SINK | 1 | AL EX | |
| 41 | 4856012312 | SCREW SPECIAL | 1 | PAN 3X12 MFZN | |
| 42 | 4856215201 | WASHER | 1 | SPCC | |
| 43 | 7392300011 | NUT HEX | 1 | 6N-2-3 MFZN | |
| 44 | 4857024900 | HEAT SINK | 1 | AL EX | |
| 45 | 7271301011 | SCREW TAPTITE | 1 | TT3 PAN 3X10 MFZN | |
| 46 | 4857024405 | HEAT SINK | 1 | AL EX | |
| 47 | 7271301011 | SCREW TAP TITE | 1 | TT3 PAN 3X10 MFZN | |
| 48 | 4857024601 | HEAT SINK | 1 | AL EX | |
| 49 | 7271301011 | SCREW TAP TITE | 2 | TT3 PAN 3X10 MFZN | |
| 50 | 4857024900 | HEAT SINK | 1 | AL EX | |
| 51 | 7271301011 | SCREW TAP TITE | 1 | TT3 PAN 3X10 MFZN | |
| 52 | 4857235400 | SHIELD CASE | 1 | SPTH-C T0.25 | |
| 53 | 4857235500 | SHIELD CASE | 1 | SPTH-C T0.25 | |
| 54 | 4857024902 | HEAT SINK | 1 | AL EX | |
| 55 | 7271300811 | SCREW TAPPING | 1 | T2S PAN 3X8 MFZN | |
| 56 | 9850136506 | MAIN PCB | 1 | | |
| 57 | 4857235600 | SHIELD PLATE | 1 | SPTH-C T0.25 | CP-365 |
| 58 | 4854814400 | BUTTON POWER | 1 | ABS BK | |

■ DTT-2075

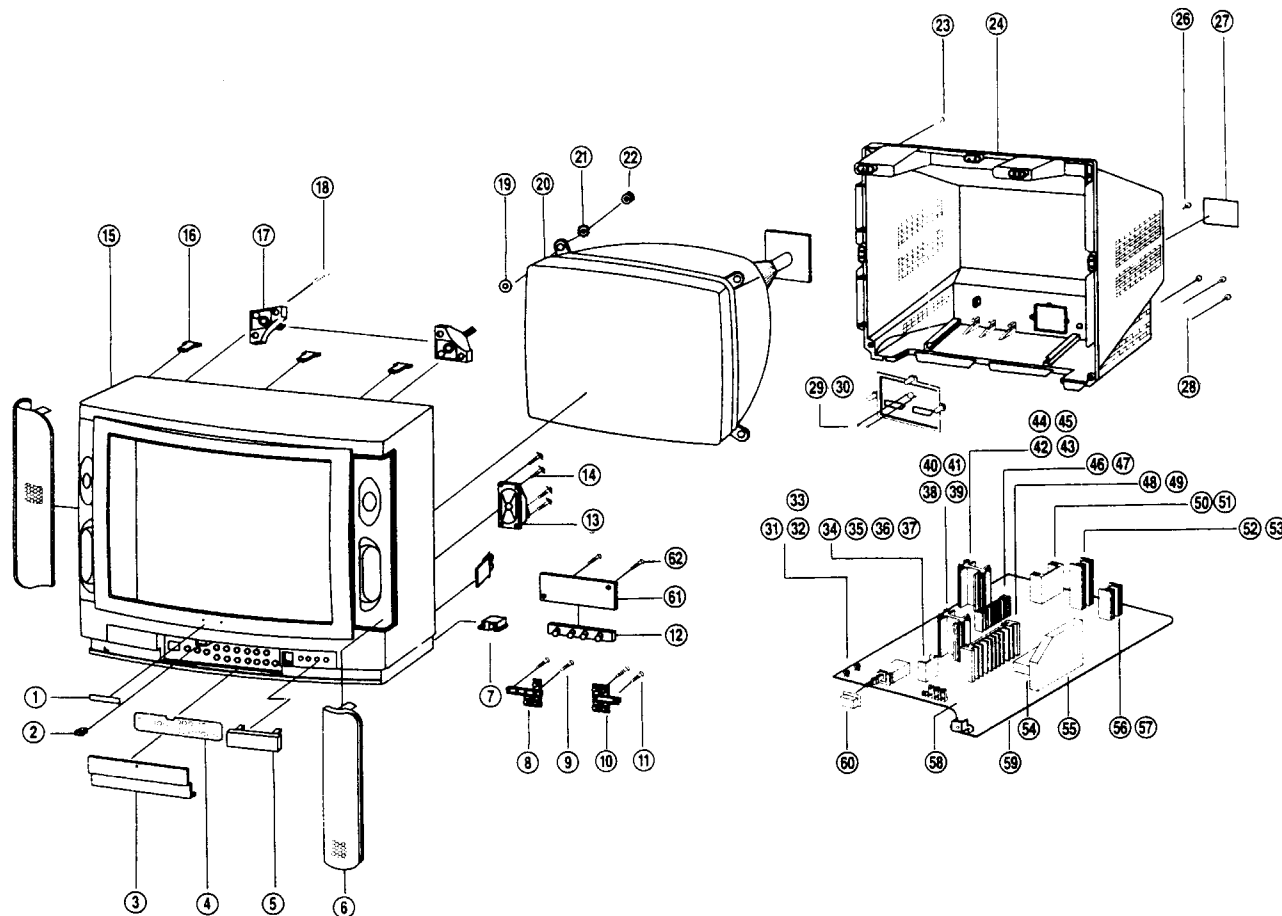


| NO. | PART CODE | PART NAME | Q'TY | DESCRIPTION | REMARK |
|-----|------------|-----------------|------|------------------------|---------------|
| 1 | 4855615900 | MARK BRAND | 1 | A1050P-H24 | |
| 2 | 4857923300 | DOOR LOCK | 1 | LA701(KIFCO) | |
| 3 | 4852813904 | DOOR | 1 | PC SMOG | |
| 4 | 4855051405 | DECO CTRL | 1 | PVC T0.25 | |
| 5 | 4855117004 | DECO SENSOR | 1 | PVC CL T0.5 | |
| 6 | 4852523400 | GRILL R | 2 | EGI T0.8 BK | |
| 7 | 4851900120 | GRILL GROUND AS | 1 | DS-W1008-RC5RCM | |
| 8 | 7128301011 | SCREW TAPPING | 2 | T2S WAS 3X10 MFZN | BUTON+M/F |
| 9 | 4853525500 | HOLDER CORD | 1 | FR HIPS BK | |
| 10 | 4854916610 | BUTTON CTRL "B" | 1 | HG ABS BK | |
| 11 | 7128301011 | SCREW TAPPING | 2 | T2S WAS 3X10 MFZN | BUTON+M/F |
| 12 | 4854915802 | BUTTON | 1 | ABS BK | |
| 13 | 7128301011 | SCREW TAPPING | 2 | T2S WAS 3X10 MFZN | BUTON+M/F |
| 14 | 4852523500 | GRILL L | 1 | EGI T0.8 BK | |
| 15 | 4858304020 | SPEAKER | 2 | 5W 80MM 125BFDLC/608BA | |
| 16 | 7128301211 | SCREW TAPPING | 8 | T2S WAS 3X12 MFZN | SPER+M/F |
| 17 | 4852045001 | MASK FRONT | 1 | HIPS BK | |
| 18 | 4853311601 | RETA BACK | 2 | HIPS NC | |
| 19 | 4853115001 | BRKT CRT | 4 | ABS NC | |
| 20 | 7121401611 | SCREW TAPPING | 12 | T2S PAN 4X16 MFZN | BUTON+M/F |
| 21 | 4856215402 | WASHER RUBBER | 4 | TMR-CA/NF BK T2 | |
| 22 | | CRT | 1 | | |
| 23 | 4856212000 | SCREW CR TFIX | 4 | SWRH+SK-5 (L=30) | |
| 24 | 7122401411 | SCREW TAPPING | 4 | T2S TRS 4X14 MFZN | M/F+C/B |
| 25 | 4852132600 | COVER BACK | 1 | FR HIPS BK | |
| 26 | | | | | |
| 27 | 7122401411 | SCREW TAPPING | 1 | T2S TRS 4X14 MFZN | C/B+FBT |
| 28 | 4855415800 | SPEC PLATE | 1 | 150ART P/E FILM(C/TV) | |
| 29 | 7122401411 | SCREW TAPPING | 3 | T2S TRS 4X14 MFZN | C/B+ANT BOARD |
| 30 | 7128301011 | SCREW TAPPING | 2 | T2S WAS 3X10 MFZN | T/A+A/B |
| 31 | 7128301211 | SCREW TAPPING | 1 | T2S WAS 3X12 MFZN | L/P+M/F |
| 32 | 7128301211 | SCREW TAPPING | 1 | T2S WAS 3X12 MFZN | L/P+M/F |
| 33 | 4853624802 | TERM ANT | 1 | FR HIPS BK | |
| 34 | 9850136504 | MAIN PCB AS | 1 | | CP-365 |
| 35 | 4857235600 | SHIELD PLATE | 1 | SPTH-C T0.25 | |
| 36 | 4857415001 | FUSE CLIP | 1 | PFC5000-0702 | |
| 37 | 4857415001 | FUSE SLIP | 1 | PFC5000-0702 | |
| 38 | 4857025400 | HEAT SINK | 1 | AL EX | |
| 39 | 4856012310 | SCREW SPECIAL | 1 | PAN 3X10 MFZN | |
| 40 | 4856215200 | WASHER | 1 | SPCC | |
| 41 | 7392300011 | NUT HEX | 1 | 6N-2-3 MFZN | |
| 42 | 4857024502 | HEAT SINK | 1 | AL EX | |
| 43 | 4856012312 | SCREW APECIAL | 1 | PAN 3X12 MFZN | |
| 44 | 4856215201 | WASHER | 1 | PAN 3X12 MFZN | |
| 45 | 7392300011 | NUT HEX | 1 | 6N-2-3 MFZN | |
| 46 | 4857024502 | HEAT SINK | 1 | AL EX | |
| 47 | 4856012312 | SCREW SPECIAL | 1 | PAN 3X12 MFZN | |
| 48 | 4856215201 | WASHER | 1 | SPCC | |
| 49 | 7392300011 | NUT HEX | 1 | 6N-2-3 MFZN | |
| 50 | 4857024900 | HEAT SINK | 1 | AL EX | |
| 51 | 7271301011 | SCREW TAPTITE | 1 | TT3 PAN 3X10 MFZN | |
| 52 | 4857024405 | HEAT SINK | 1 | AL EX | |
| 53 | 7271301011 | SCREW TAPTITE | 1 | TT3 PAN 3X10 MFZN | |
| 54 | 4857024601 | HEAT SINK | 1 | AL EX | |
| 55 | 7271301011 | SCREW TAPTITE | 2 | TT3 PAN 3X10 MFZN | |
| 56 | 4857024900 | HEAT SINK | 1 | AL EX | |
| 57 | 7121260811 | SCREW TAPPING | 1 | T2S PAN 3X8 MFZN | |
| 58 | 4857235400 | SHIELD CASE | 1 | SPTH-C T0.25 | |
| 59 | 4857235500 | SHIELD CASE | 1 | SPTH-C T0.25 | |
| 60 | 4857024902 | HEAT SINK | 1 | AL EX | |
| 61 | 7121300811 | SCREW TAPPING | 1 | T2S PAN 3X8 MFZN | |
| 62 | 4854814400 | BUTTON POWER | 1 | ABS BK | |

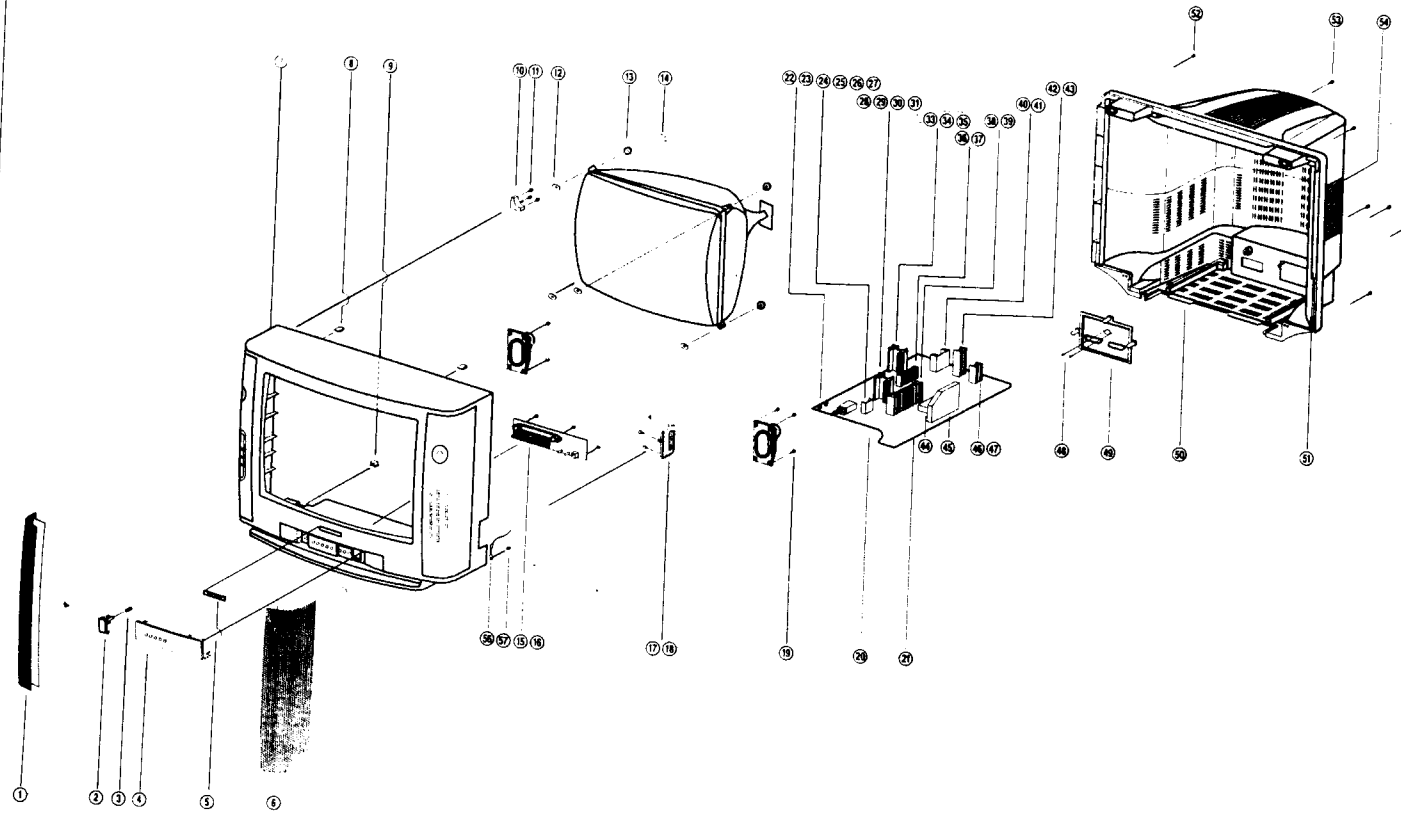
■ DTT-20C1



| NO. | PART CODE | PART NAME | Q'TY | DESCRIPTION | REMARK |
|-----|------------|------------------|------|---------------------|----------------|
| 1 | 4852524900 | GRILL | 2 | EGI T0.5+SPONGE | |
| 2 | 4854836801 | BUTTON POWER | 1 | ABS BK | |
| 3 | 4856717900 | SPRING | 1 | SWPA | |
| 4 | 4855518401 | DECO SENSOR | 1 | P.C SMOG | |
| 5 | 4855615900 | MARK BRAND | 1 | A1050P-H24 T0.4 | |
| 6 | 4852046401 | MASK FRONT | 1 | HIPS BK | |
| 7 | 4853311601 | RETAINER BACK | 2 | HIPS NC | |
| 8 | 4853525500 | HOLDER CORD | 1 | HIPS BK | |
| 9 | 4853115001 | BRACKET | 4 | ABS NC | |
| 10 | 7121401611 | SCREW TAPPING | 12 | T2S PAN 4X16 | MFZN |
| 11 | 9976210400 | WASHER RUBBER | 4 | RUBBER BK | POLKOLOR |
| 12 | 4856215402 | WASHER RUBBER | 4 | CR | |
| 13 | 4856212000 | SCREW CRT | FIX | 4 | 5.0MM-3K-5L=30 |
| 14 | 4851900120 | GRILL GROUND AS. | 2 | DS-W1007-RC5RCM | |
| 15 | 7128301011 | SCREW TAPPING | 2 | T2S WAS 3X10 MFZN | |
| 16 | 4854920701 | BUTTON | 1 | ABS BK | |
| 17 | 7128301011 | SCREW TAPPING | 2 | T2S WAS 3X10 MFZN | |
| 18 | 4853281011 | HOLDER | 1 | HIPS BK | |
| 19 | 7128301011 | SCREW TAPPING | 8 | T2S WAS 3X10 MFZN | |
| 20 | 9850136506 | MAIN PCB AS | 1 | CP-365 | |
| 21 | 4857235600 | SHIELD PLATE | 1 | SPTH-C T0.25 | |
| 22 | 4857415001 | FUSE SLIP | 1 | PFC5000-0702 | |
| 23 | 4857415001 | FUSE CLIP | 1 | PFC5000-0702 | |
| 24 | 4857621200 | INSU COVER | 1 | PVC T1.0(94V-0) | |
| 25 | 4857025400 | HEAT SINK | 1 | AL EX | |
| 26 | 4856012310 | SCREW SPECIAL | 1 | PAN 3X10 MFZN | |
| 27 | 4856215200 | WASHER | 1 | SPCC | |
| 28 | 7392300011 | NUT HEX | 1 | 6N-2-3 MFZN | |
| 29 | 4857024502 | HEAT SINK | 1 | AL EX | |
| 30 | 4856012312 | SCREW SPECIAL | 1 | PAN 3X12 MFZN | |
| 31 | 4856215201 | WASHER | 1 | SPCC | |
| 32 | 7392300011 | NUT HEX | 1 | 6N-2-3 MFZN | |
| 33 | 4857024502 | HEAT SINK | 1 | AL EX | |
| 34 | 4856012312 | SCREW SPECIAL | 1 | PAN 3X12 MFZN | |
| 35 | 4856215201 | WASHER | 1 | SPCC | |
| 36 | 7392300011 | NUT HEX | 1 | 6N-2-3 MFZN | |
| 37 | 4857024900 | HEAT SINK | 1 | AL EX | |
| 38 | 7271301011 | SCREW TAPTITE | 1 | TT3 PAN 3X10 MFZN | |
| 39 | 4857024405 | HEAT SINK | 1 | AL EX | |
| 40 | 7271301011 | SCREW TAPTITE | 1 | TT3 PAN 3X10 MFZN | |
| 41 | 4857024601 | HEAT SINK | 1 | AL EX | |
| 42 | 7271301011 | SCREW TAPTITE | 2 | TT3 PAN 3X8 MFZN | |
| 43 | 4857024900 | HEAT SINK | 1 | AL EX | |
| 44 | 7121260811 | SCREW TAPPING | 1 | T2S PAN 3X8 MFZN | |
| 45 | 4857235400 | SHIELD CASE | 1 | SPTH-C T0.25 | |
| 46 | 4857235500 | SHIELD CASE | 1 | SPTH-C T0.5 | |
| 47 | 4857024902 | HEAT SINK | 1 | AL EX | |
| 48 | 7121300811 | SCREW TAPPING | 1 | T2S PAN 3X8 MFZN | |
| 49 | 7128261011 | SCREW TAPPING | 2 | T2S WAS 2.6X10 MFZN | |
| 50 | 4853624802 | TERMINAL ANT | 1 | HIPS BK | |
| 51 | 4852133900 | COVER BACK | 1 | FR HIPS BK | |
| 52 | 7122401411 | SCREW TAPPING | 4 | T2S TRS 4X14 MFZN | BC+MF |
| 53 | 4855415800 | SPEC PLATE | 1 | 150ART P/E FILM | |
| 54 | 7122401411 | SCREW TAPPING | 1 | T2S TRS 4X14 MFZN | BC+FBT |
| 55 | 7122401411 | SCREW TAPPING | 3 | T2S TRS 4X14 MFZN | BC-TERM |
| 56 | 4857817610 | CLOTH BLACK | 3 | FELT T0.7 L=300 | |

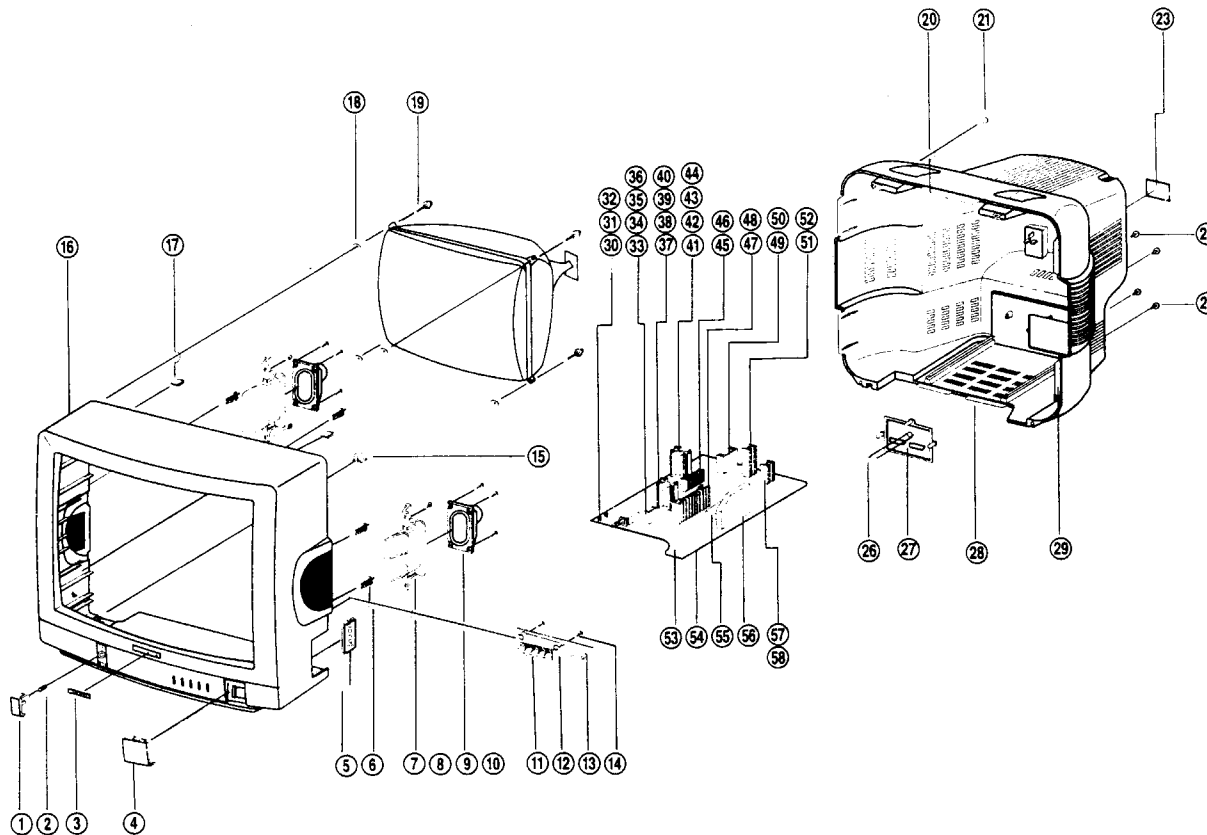


| NO. | PART CODE | PART NAME | Q'TY | DESCRIPTION | REMARK |
|-----|------------|-----------------|------|-----------------------|-----------|
| 1 | 4855617200 | MARK BRAND | 1 | A1050P-H24 | |
| 2 | 4857923300 | DOOR LOCK | 1 | LA701(KIFCO) | |
| 3 | 4852811701 | DOOR | 1 | ABS BK | |
| 4 | 4855051405 | DECO CTRL | 1 | PVC T0.25 | |
| 5 | 4855514404 | DECO SENSOR | 1 | P C DARK RED | |
| 6 | 4852520500 | GRILL | 2 | EGI T0.8 BK | |
| 7 | 4853525501 | HOLDER CORD | 1 | HIPS BK | |
| 8 | 4854916610 | BUTTON CTRL "B" | 1 | HG ABS BK | |
| 9 | 7128301011 | SCREW TAPPING | 2 | T2S WAS 3X10 MFZN | BUTON+M/F |
| 10 | 4854915802 | BUTTON | 1 | ABS BK | |
| 11 | 7128301011 | SCREW TAPPING | 2 | T2S WAS 3X10 MFZN | BUTON+M/F |
| 12 | 4853524101 | HOLDER LED | 1 | HIPS BK | |
| 13 | 4858304020 | SPEAKER | 2 | | |
| 14 | 7128301211 | SCREW TAPPING | 8 | T2S WAS 3X12 MFZN | SPER+M/F |
| 15 | 4852041601 | MASK FRONT | 1 | HIPS BK | |
| 16 | 4853311601 | RETA BACK | 5 | HIPS NC | |
| 17 | 4853414401 | BRKT CRT | 4 | ABS NC | |
| 18 | 7121401611 | SCREW TAPPING | 12 | T2S PAN 4X16 MFZN | BUTON+M/F |
| 19 | 4856214800 | WASHER RUBBER | 4 | TMR-CA/NF BK T2 | |
| 20 | 4859605660 | CRT | 1 | | |
| 21 | 4856213200 | WASHER CRT FIX | 4 | SK-5 B.K T1.2 | |
| 22 | 7391500011 | NUT HEX | 4 | 6N-1-5 MFZN | |
| 23 | 7122401411 | SCREW TAPPING | 7 | T2S TRS 4X14 MFZN | M/F+C/B |
| 24 | 4852130100 | COVER BACK | 1 | FR HIPS BK | |
| 25 | | | | | |
| 26 | 7122401411 | SCREW TAPPING | 1 | T2S TRS 4X14 MFZN | C/B+FBT |
| 27 | 4855415800 | SPEC PLATE | 1 | 150ART P/E FILM(C/TV) | |
| 28 | 7122401411 | SCREW TAPPING | 3 | T2S TRS 4X14 MFZN | BC+TERM |
| 29 | 4853624802 | TERMINAL ANT | 1 | HIPS BK | |
| 30 | 7128261011 | SCREW TAPPING | 2 | T2S PAN 3X8 MFZN | |
| 31 | 4857415001 | FUSE CLIP | 1 | PFC5000-0702 | |
| 32 | 4857415001 | FUSE CLIP | 1 | PFC5000-0702 | |
| 33 | 4857621200 | INSU COVER | 1 | PVC T1.0(94V-0) | |
| 34 | 4857025400 | HEAT SINK | 1 | AL EX | |
| 35 | 4857025400 | SCREW SPECIAL | 1 | PAN 3X10 MFZN | |
| 36 | 4856215200 | WASHER | 1 | SPCC | |
| 37 | 7392300011 | NUT HEX | 1 | 6N-2-3 MFZN | |
| 38 | 4857024502 | HEAT SINK | 1 | AL EX | |
| 39 | 4856012312 | SCREW SPECIAL | 1 | PAN 3X12 MFZN | |
| 40 | 4856215201 | WASHER | 1 | SPCC | |
| 41 | 7392300011 | NUT HEX | 1 | 6N-2-3 MFZN | |
| 42 | 4857024502 | HEAT SINK | 1 | AL EX | |
| 43 | 4856012312 | SCREW SPECIAL | 1 | PAN 3X12 MFZN | |
| 44 | 4856215201 | WASHER | 1 | SPCC | |
| 45 | 7392300011 | NUT HEX | 1 | 6-2-3 MFZN | |
| 46 | 4857024900 | HEAT SINK | 1 | AL EX | |
| 47 | 7271301011 | SCREW TAPTITE | 1 | TT3 PAN 3X10 MFZN | |
| 48 | 4857024405 | HEAT SINK | 1 | AL EX | |
| 49 | 7271301011 | SCREW TAPTITE | 1 | TT3 PAN 3X10 MFZN | |
| 50 | 4857024601 | HEAT SINK | 1 | AL EX | |
| 51 | 7271301011 | SCREW TAPTITE | 2 | TT3 PAN 3X10 MFZN | |
| 52 | 4857024900 | HEAT SINK | 1 | AL EX | |
| 53 | 7271301011 | SCREW TAPTITE | 1 | TT3 PAN 3X10 MFZN | |
| 54 | 4857235400 | SHIELD CASE | 1 | SPTH-C T0.25 | |
| 55 | 4857235500 | SHIELD CASE | 1 | SPTH-C T0.25 | |
| 56 | 4857024902 | HEAT SINK | 1 | AL EX | |
| 57 | 7271300811 | SCREW TAPPING | 1 | T2S PAN 3X8 MFZN | |
| 58 | 9850136506 | MAIN PCBA | 1 | | |
| 59 | 4857235600 | SHIELD PLATE | 1 | SPTH-C T0.25 | CP-365 |
| 60 | 4854814400 | BUTTON POWER | 1 | HIPS BK | |
| 61 | 4859812314 | PCB CONTROL | 1 | | |
| 62 | 7128301011 | SCREW TAPPING | 2 | T2S WAS 3X10 MFZN | |



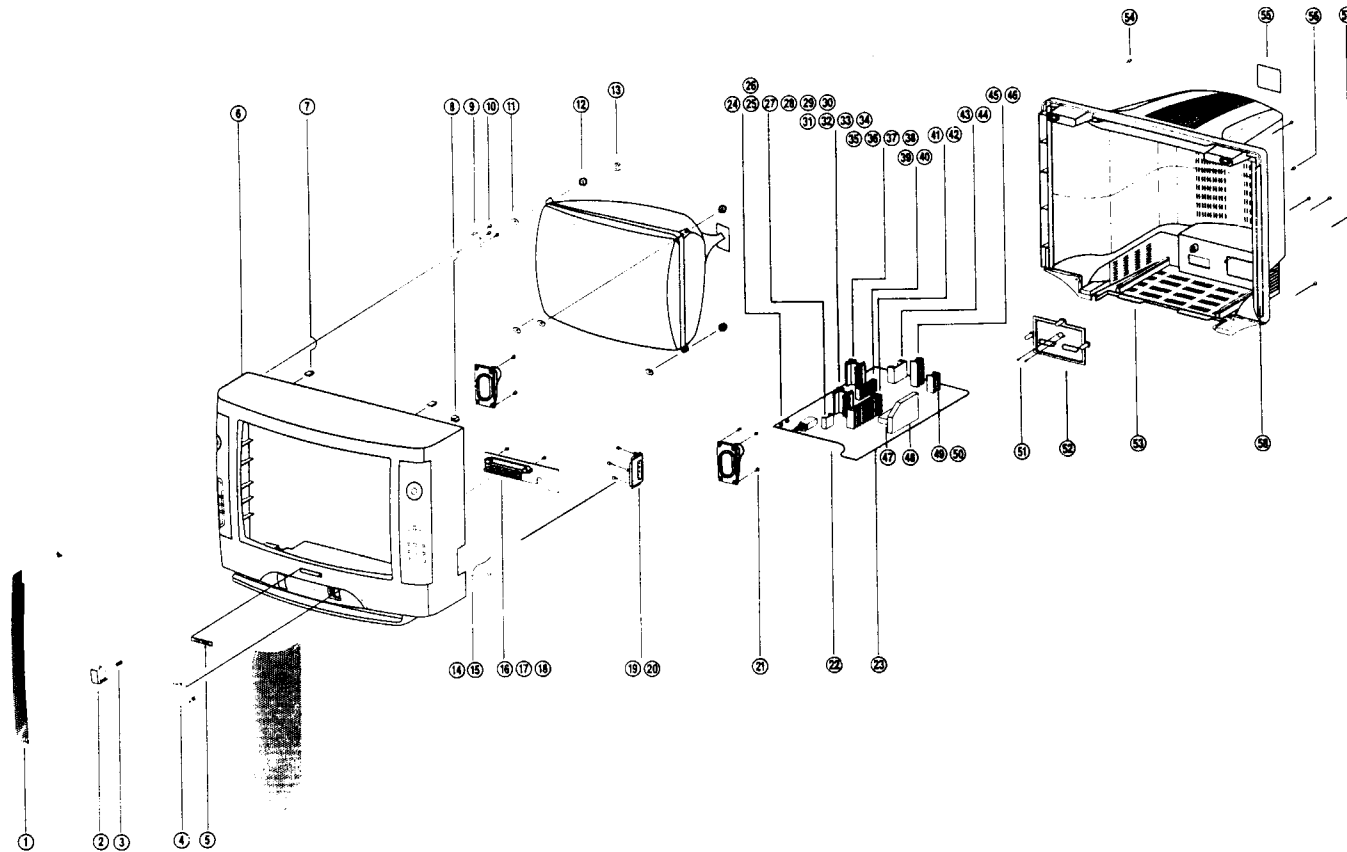
| NO. | PART CODE | PART NAME | Q'TY | DESCRIPTION | REMARK |
|-----|------------|-----------------|------|-----------------------|--------|
| 1 | 4852525100 | GRILL L | 1 | EGI T0.5+SPONGE | |
| 2 | 4854836901 | BUTTON POWER | 1 | ABS BK | |
| 3 | 4856717900 | SPRING | 1 | SWPA | |
| 4 | 4855518501 | DECO SENSOR | 1 | P.C SMOG | |
| 5 | 4855617500 | MARK BRAND | 1 | CU AU+ABS BK | |
| 6 | 4852525000 | GRILL R | 1 | EGI T0.5+SPONGE | |
| 7 | 4852046501 | MASK FRONT | 1 | HIPS BK | |
| 8 | 4853311601 | RETAINER BACK | 2 | HIPS NC | |
| 9 | 4853525501 | HOLDER CORD | 1 | HIPS GY | |
| 10 | 4853414401 | BRKT CRT | 4 | ABS NC | |
| 11 | 7121401611 | SCREW TAPPING | 12 | T2S PAN 4X16 MFZN | |
| 12 | 4856215402 | WASHER RUBBER | 4 | CR | |
| 13 | 4856213200 | WASHER CRT FIX | 4 | SK-5 8.K T1.2 | |
| 14 | 7391500011 | NUT HEX | 4 | 6N-1-5 MFZN | |
| 15 | 4854920801 | BUTTON | 1 | ABS BK | |
| 16 | 7128301011 | SCREW TAPPING | 3 | T2S WAS 3X10 MFZN | |
| 17 | 4852317601 | AV PANNEL | 1 | HIPS BK | |
| 18 | 7128301011 | SCREW TAPPING | 3 | T2S WAS 3X10 MFZN | |
| 19 | 7128301011 | SCREW TAPPING | 8 | T2S WAS 3X10 MFZN | |
| 20 | 9850136504 | MAIN PCB AS | 1 | | |
| 21 | 4857235600 | SHIELD PLATE | 1 | SPTH-C T0.25 | |
| 22 | 4857415001 | FUSE CLIP | 1 | PFC5000-0702 | |
| 23 | 4857415001 | FUSE CLIP | 1 | PFC5000-0702 | |
| 24 | 4857025401 | HEAT SINK | 1 | AL EX | |
| 25 | 4856012310 | SCREW SPECIAL | 1 | PAN 3X10 MFZN | |
| 26 | 4856215200 | WASHER | 1 | SPCC | |
| 27 | 7392300011 | NUT HEX | 1 | 6N-2-3 MFZN | |
| 28 | 4857024502 | HEAT SINK | 1 | AL EX | |
| 29 | 4856012312 | SCREW SPECIAL | 1 | PAN 3X12 MFZN | |
| 30 | 4856215201 | WASHER | 1 | PAN 3X12 MFZN | |
| 31 | 7392300011 | NUT HEX | 1 | 6N-2-3 MFZN | |
| 32 | 4857024502 | HEAT SINK | 1 | AL EX | |
| 33 | 4856012312 | SCREW SPECIAL | 1 | PAN 3X12 MFZN | |
| 34 | 4856215201 | WASHER | 1 | SPCC | |
| 35 | 7392300011 | NUT HEX | 1 | 6N-2-3 MFZN | |
| 36 | 4857024900 | HEAT SINK | 1 | AL EX | |
| 37 | 7271301011 | SCREW TAPTITE | 1 | TT3 PAN 3X10 MFZN | |
| 38 | 4857024405 | HEAT SINK | 1 | AL EX | |
| 39 | 7271301011 | SCREW TAPTITE | 1 | TT3 PAN 3X10 MFZN | |
| 40 | 4857024601 | HEAT SINK | 1 | AL EX | |
| 41 | 7271300811 | SCREW TAPTITE | 2 | TT3 PAN 3X8 MFZN | |
| 42 | 4857024900 | HEAT SINK | 1 | AL EX | |
| 43 | 7121260811 | SCREW TAPPING | 1 | T2S PAN 3X8 MFZN | |
| 44 | 4857235400 | SHIELD CASE | 1 | SPTH-C T0.25 | |
| 45 | 4857235900 | SHIELD CASE | 1 | SPTH-C T0.25 | |
| 46 | 4857024902 | HEAT SINK | 1 | AL EX | |
| 47 | 7121300811 | SCREW TAPPING | 1 | T2S PAN 3X8 MFZN | |
| 48 | 7128261011 | SCREW TAPPING | 2 | T2S WAS 2.6X10 MFZN | |
| 49 | 4853624802 | TERMINAL ANT | 1 | HIPS BK | |
| 50 | 4852134000 | COVER BACK | 1 | FR HIPS BK | |
| 51 | 4857817601 | CLOTH BLACK | 3 | FELT T0.7 L=300 | |
| 52 | 7128261011 | SCREW TAPPING | 4 | T2S TRS 4X14 MFZN | 7+50 |
| 53 | 4855415800 | SPEC PLATE | 1 | 150ART P/E FILM(C/TV) | |
| 54 | 7128261011 | SCREW TAPPING | 1 | T2S TRS 4X14 MFZN | 50+20 |
| 55 | 7128261011 | SCREW TAPPING | 3 | T2S TRS 4X14 MFZN | 49+50 |
| 56 | 4851900120 | GRILL GROUND AS | 2 | DS-W1007-RC5RCM | |
| 57 | 7128301011 | SCREW TAPPING | 2 | T2S WAS 3X10 MFZN | 1.6+7 |

■ DTT-21B1



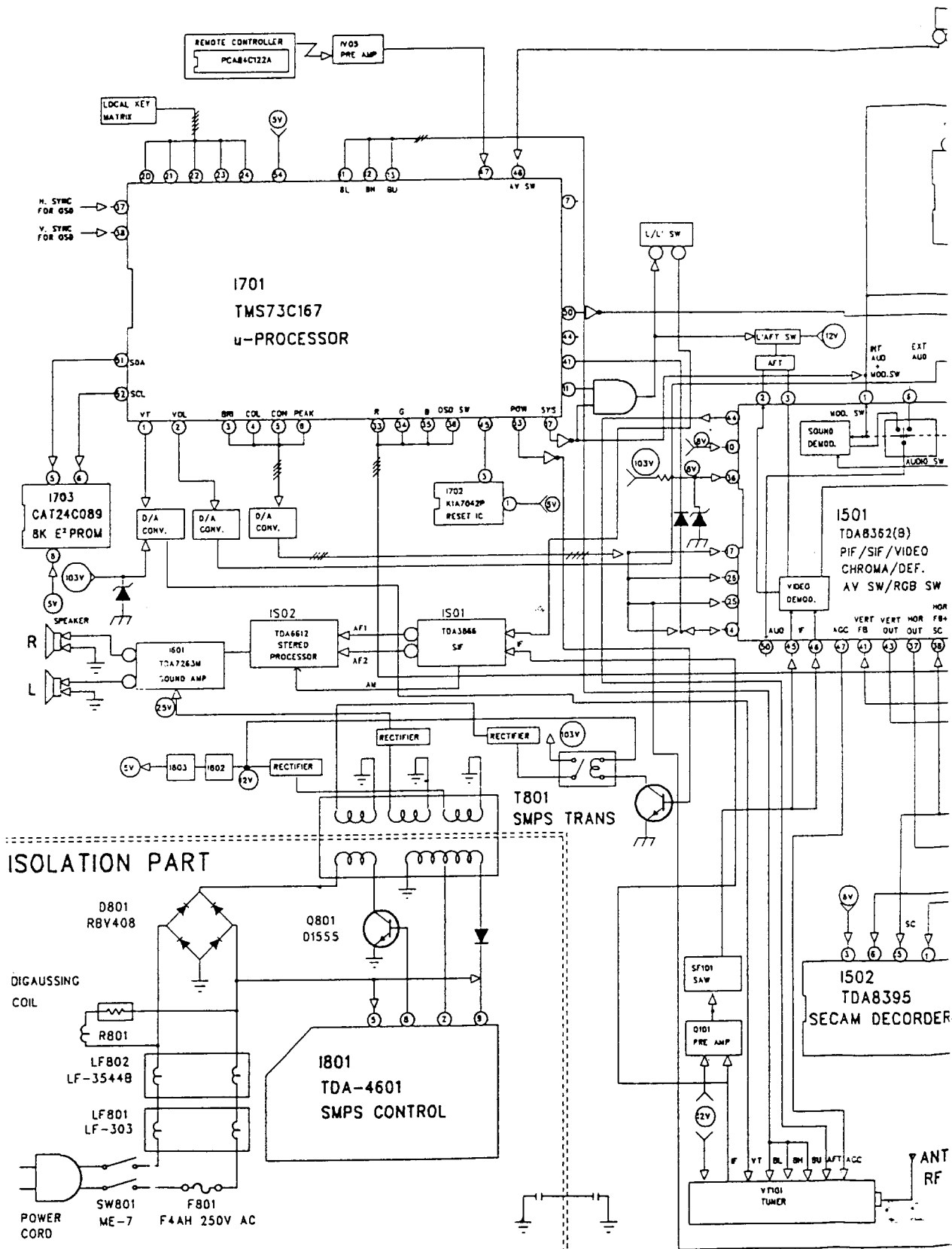
| NO. | PART CODE | PART NAME | Q'TY | DESCRIPTION | REMARK |
|-----|------------|---------------|------|-----------------------|-----------|
| 1 | 4854837301 | BUTTON POWER | 1 | ABS BK | |
| 2 | 4856717900 | SPRING | 1 | SWPA | |
| 3 | 4855615900 | MARK BRAND | 1 | A1050P-H24 T0 4 | |
| 4 | 4855518901 | DECO SENSOR | 1 | P.C SMOG | |
| 5 | 4852317601 | PANEL A/V | 1 | HIPS BK | |
| 6 | 4853743001 | RETA | 4 | HIPS NC | |
| 7 | 4853945201 | BRKT SPKR | 2 | HIPS BK | |
| 8 | 7122401411 | SCREW TAPPING | 4 | T2S TRS 4X14 MFZN | RETA+BRKT |
| 9 | 4858304920 | SPEAKER | 2 | 5W 8 OHM MSF-2D4SB53D | |
| 10 | 7128301011 | SCREW TAPPING | 8 | T2S WAS 3X10 MFZN | SPKR+BRKT |
| 11 | 4854921101 | BUTTON | 1 | ABS BK | |
| 12 | | CONTROL PCB | 1 | | |
| 13 | 4853528101 | LED HOLDER | 1 | HIPS BK | |
| 14 | 7128301011 | SCREW TAPPING | 2 | T2S WAS 3X10 MFZN | |
| 15 | 4853525500 | HOLDER CORD | 1 | FR HIPS BK | |
| 16 | 4852046901 | MASK FRONT | 1 | HIPS BK | |
| 17 | 4853311601 | RETAINER BACK | 2 | HIPS NC | |
| 18 | 4856215402 | WASHER RUBBER | 4 | CR | |
| 19 | 4856212000 | SCREW CRT FIX | 4 | SWRM-SK-5(L=30) | |
| 20 | 4857817620 | CLOTH BLACK | 1 | FELT T0.5 L=100 | |
| 21 | 7122401411 | SCREW TAPPING | 4 | T2S TRS 4X14 MFZN | MF+C/B |
| 22 | | | | | |
| 23 | 4855415800 | SPEC PLATE | 1 | 150ART P/E FILM | |
| 24 | 7122401411 | SCREW TAPPING | 1 | T2S TRS 4X14 MFZN | C/B+FBT |
| 25 | 7122401411 | SCREW TAPPING | 3 | T2S TRS 4X14 MFZN | C/B+TERM |
| 26 | 7128261011 | SCREW TAPPING | 2 | T2S WAS 2.6X10MFZN | TERM+PLUG |
| 27 | 4853624802 | TERMINAL ANT | 1 | HIPS BK | |
| 28 | 4852134400 | COVER BACK | 1 | FR HIPS BK | |
| 29 | 4857817620 | CLOTH BLACK | 4 | FELT T0.5 L=100 | |
| 30 | 4857415001 | FUSE CLIP | 1 | PFC5000-0702 | |
| 31 | 4857415001 | FUSE CLIP | 1 | PFC5000-0702 | |
| 32 | 4857621200 | INSU COVER | 1 | PVC T1 (94V-0) | |
| 33 | 4857025400 | HEAT SINK | 1 | AL EX | |
| 34 | 4857025400 | SCREW SPECIAL | 1 | PAN 3X10 MFZN | |
| 35 | 4856215200 | WASHER | 1 | SPCC | |
| 36 | 7392300011 | NUT HEX | 1 | 6N-2-3 MFZN | |
| 37 | 4857024502 | HEAT SINK | 1 | AL EX | |
| 38 | 4856012312 | SCREW SPECIAL | 1 | PAN 3X12 MFZN | |
| 39 | 4856215201 | WASHER | 1 | SPCC | |
| 40 | 7392300011 | NUT HEX | 1 | 6N-2-3 MFZN | |
| 41 | 4857024502 | HEAT SINK | 1 | AL EX | |
| 42 | 4856012312 | SCREW SPECIAL | 1 | PAN 3X12 MFZN | |
| 43 | 4856215201 | WASHER | 1 | SPCC | |
| 44 | 7392300011 | NUT HEX | 1 | 6N-2-3 MFZN | |
| 45 | 4857024900 | HEAT SINK | 1 | AL EX | |
| 46 | 7271301011 | SCREW TAPTITE | 1 | TT3 PAN 3X10 MFZN | |
| 47 | 4857024405 | HEAT SINK | 1 | AL EX | |
| 48 | 7271301011 | SCREW TAPTITE | 1 | TT3 PAN 3X10 MFZN | |
| 49 | 4857024601 | HEAT SINK | 1 | AL EX | |
| 50 | 7271301011 | SCREW TAPTITE | 2 | TT3 PAN 3X10 MFZN | |
| 51 | 4857024900 | HEAT SINK | 1 | AL EX | |
| 52 | 7271301011 | SCREW TAPTITE | 1 | TT3 PAN 3X10 MFZN | |
| 53 | | MAIN PCB | 1 | | CP=365 |
| 54 | 4857235600 | SHIELD PLATE | 1 | SPTH-C T0.25 | |
| 55 | 4857235400 | SHIELD CASE | 1 | SPTH-C T0.25 | |
| 56 | 4857235500 | SHIELD CASE | 1 | SPTH-C T0.25 | |
| 57 | 4857024902 | HEAT SINK | 1 | AL EX | |
| 58 | 7271300811 | SCREW TAPPING | 1 | T2S PAN 3X8 MFZN | |

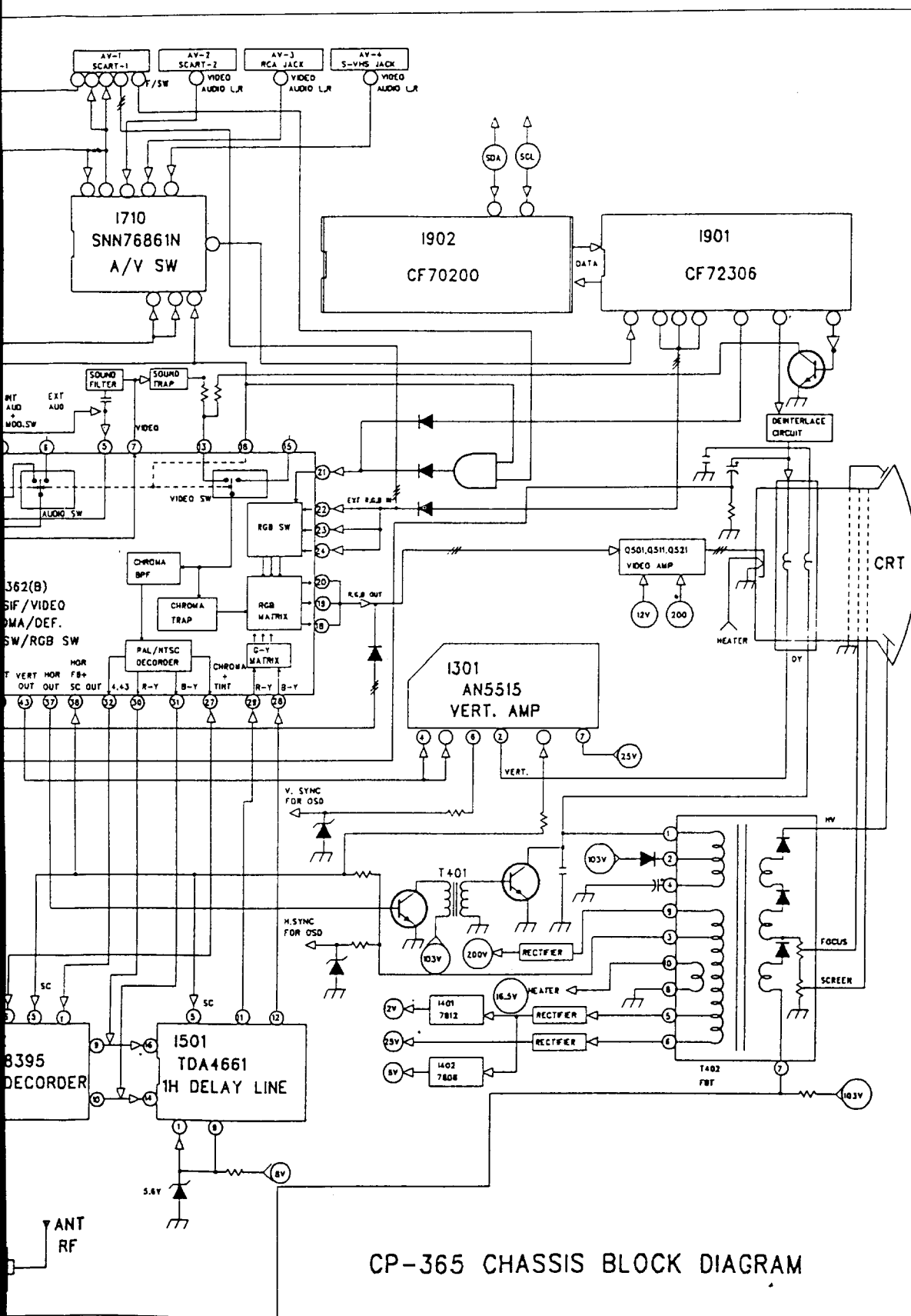
■ DTT-21C1



| NO. | PART CODE | PART NAME | Q'TY | DESCRIPTION | REMARK |
|-----|------------|-----------------|------|---------------------|---------|
| 1 | 4852525200 | GRILL | 2 | EGI T0.5+SPONGE | |
| 2 | 4854837402 | BUTTON POWER | 1 | ABS BK | |
| 3 | 4856717900 | SPRING | 1 | SWPA | |
| 4 | 4855519001 | DECO SENSOR | 1 | P C SMOG | |
| 5 | 4855615900 | MARK BRAND | 1 | A105OP-H24 T0.4 | |
| 6 | 4852047001 | MASK FRONT | 1 | HIPS BK | |
| 7 | 4853311601 | RETAINER BACK | 2 | HIPS NC | |
| 8 | 4853525501 | HOLDER CORD | 1 | HIPS BY | |
| 9 | 4853414401 | BRKT CRT | 4 | ABS NC | |
| 10 | 7121401411 | SCREW TAPPING | 12 | T2S PAN 4X14 MFZN | |
| 11 | 4856214800 | WASHER RUBBER | 4 | CR | |
| 12 | 4856213200 | WASHER CRT FIX | 4 | SK-5 B.K T1.2 | |
| 13 | 7391500011 | NUT HEX | 4 | 6N-1-5 MFZN | |
| 14 | 4851900120 | GRILL GROUND AS | 2 | DS-W1007-PCSRCM | |
| 15 | 7128301011 | SCREW TAPPING | 2 | T2S WAS 3X10 MFZN | |
| 16 | 4854920701 | BUTTON | 1 | ABS BK | |
| 17 | 7128301011 | SCREW TAPPING | 2 | T2S WAS 3X10 MFZN | |
| 18 | 4853528101 | HOLDER | 1 | HIPS BK | |
| 19 | 4852317601 | PANEL AV | 1 | HIPS BK | |
| 20 | 7128301011 | SCREW TAPPING | 3 | T2S WAS 3X10 | |
| 21 | 7128301011 | SCREW TAPPING | 8 | T2S WAS 3X10 MFZN | |
| 22 | 9850136506 | MAIN PCB AS | 1 | | |
| 23 | 4857235600 | SHIELD PLATE | 1 | SPTH-C T0.25 | |
| 24 | 4857415001 | FUSE CLIP | 1 | PFC5000-0702 | |
| 25 | 4857621200 | INSU COVER | 1 | PVC T1.0(94V-0) | |
| 26 | 4857025400 | HEAT SINK | 1 | AL EX | |
| 27 | 4856012310 | SCREW SPECIAL | 1 | PAN 3X10 MFZN | |
| 28 | 4856215200 | WASHER | 1 | SPCC | |
| 29 | 7392300011 | NUT HEX | 1 | 6N-2-3 MFZN | |
| 30 | 4857024502 | HEAT SINK | 1 | AL EX | |
| 31 | 4856012312 | SCREW SPECIAL | 1 | PAN 3X12 MFZN | |
| 32 | 4856215201 | WASHER | 1 | SPCC | |
| 33 | 7392300011 | NUT HEX | 1 | 6N-2-3 MFZN | |
| 34 | 4857024502 | HEAT SINK | 1 | AL EX | |
| 35 | 4856012312 | SCREW SPECIAL | 1 | PAN 3X12 MFZN | |
| 36 | 4856215201 | WASHER | 1 | SPCC | |
| 37 | 7392300011 | NUT HEX | 1 | 6N-2-3 MFZN | |
| 38 | 4857024900 | HEAT SINK | 1 | AL EX | |
| 39 | 7271301011 | SCREW TAPTITE | 1 | TT3 PAN 3X10 MFZN | |
| 40 | 4857024405 | HEAT SINK | 1 | AL EX | |
| 41 | 7271301011 | SCREW TAPTITE | 1 | TT3 PAN 3X10 MFZN | |
| 42 | 4857024601 | HEAT SINK | 1 | AL EX | |
| 43 | 7271301011 | SCREW TAPTITE | 2 | TT3 PAN 3X10 MFZN | |
| 44 | 4857024900 | HEAT SINK | 1 | AL EX | |
| 45 | 7121260811 | SCREW TAPPING | 1 | T2S PAN 3X8 MFZN | |
| 46 | 4857235400 | SHIELD CASE | 1 | SPTH-C T0.25 | |
| 47 | 4857235500 | SHIELD CASE | 1 | SPTH-C T0.25 | |
| 48 | 4857024902 | HEAT SINK | 1 | AL EX | |
| 49 | 7121300611 | SCREW TAPPING | 1 | T2S PAN 3X8 MFZN | |
| 50 | 7128261011 | SCREW TAPPING | 2 | T2S WAS S.6X10 MFZN | |
| 51 | 4853624802 | TERMINAL ANT | 1 | HIPS BK | |
| 52 | 4852134500 | COVER BACK | 1 | FR HIPS BK | |
| 53 | 7122401411 | SCREW TAPPING | 4 | T2S TRS 4X14 MFZN | |
| 54 | 4855415800 | SPEC PLATE | 1 | 150ART P/E FILM | |
| 55 | 7122401411 | SCREW TAPPING | 1 | T2S TRS 4X14 MFZN | BC+FBT |
| 56 | 7122401411 | SCREW TAPPING | 3 | T2S TRS 4X14 MFZN | BC+TERM |
| 57 | 4857817610 | CLOTH BLACK | 2 | FELT T0.7 L=300 | |

CHASSIS





CP-365 CHASSIS BLOCK DIAGRAM

CHASSIS : CP-365

SCHEMATIC DIAGRAM

* PAL/SECAM - B/G (FTZ)

* PAL/SECAM - B/G. D/K

NTSC - 3.58/4.43 (AV)

* PAL/SECAM - B/G.

SECAM -L/L'

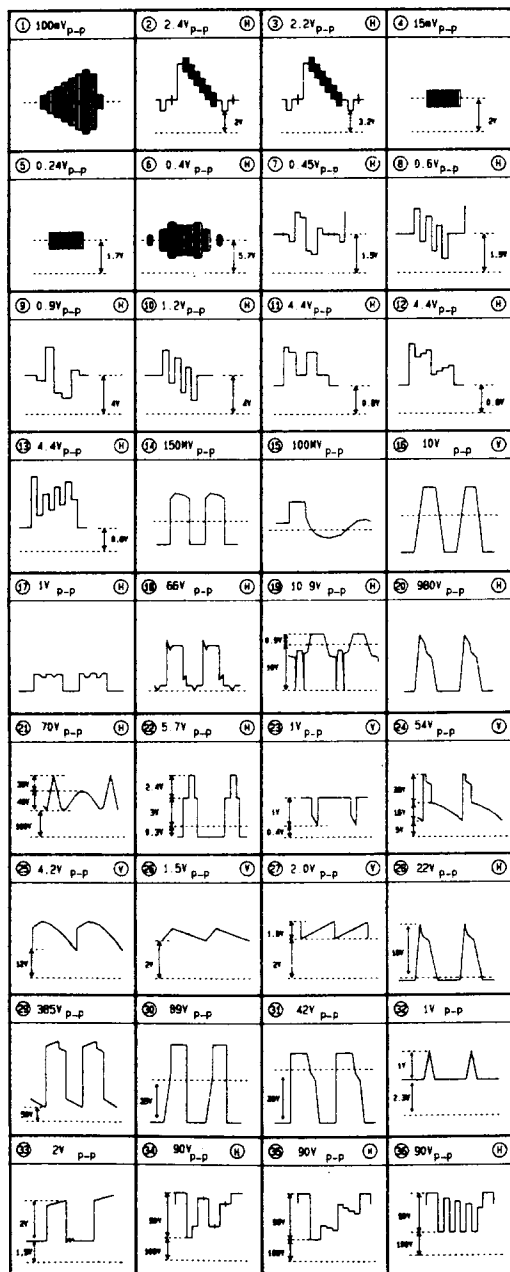
* PAL - B/G

* PAL - I

WAVE FORMS

INPUT SIGNAL : PAL SYSTEM

VIDEO : 8 STEP COLOR BAR 87.5% AM
AUDIO : 1KHz SINE WAVE 60% FM



1. THE UNITS OF RESISTANCE "OHM" IS OMITTED.
(K = 1000 OHMS M = 1000000 OHMS)

2. ALL RESISTORS ARE 1/6 WATT UNLESS OTHERWISE NOTED.

3. CAPACITANCE VALUES 1.0 AND ABOVE ARE IN pF THOSE BELOW ARE IN uF EXCEPT AS INDICATED.
(uF = 1000000 pF)

4. INDUCTOR VALUES ARE IN uH EXCEPT AS INDICATED.

5. ALL DIODE ARE 1N4148 EXCEPT AS INDICATED.

6. ALL NPN TRANSISTOR ARE KTC3198Y ALL PNP TRANSISTOR ARE KTA1266Y EXCEPT AS INDICATED.

7. DC VOLTAGE AND AC WAVEFORM MEASUREMENT CONDITIONS.

ALL THE VOLTAGES IN EACH POINT ARE MEASURED UNDER THE STANDARD COLOUR BAR SIGNAL INPUT (5 CHANNEL) AND ALL CONTROLS SET TO THE MAXIMUM POSITION.

(DC VOLTAGES WITH VTVM AND AC WAVEFORMS WITH OSCILLOSCOPE)

(FOR A NOMINAL LINE VOLTAGE : AC 230V 50Hz)

8. SINCE THIS SCHEMATIC DIAGRAM IS A STANDARD ONE THE CIRCUIT AND CIRCUIT CONSTANTS MAY BE SUBJECT TO CHANGE FOR IMPROVEMENT WITHOUT ANY NOTICE.

SAFETY CAUTION :

BEFORE SERVICING THIS CHASSIS IT IS IMPORTANT THAT THE SERVICE TECHNICIAN READ AND FOLLOW THE "X-RAY RADIATION PRECAUTION" "SAFETY PRECAUTIONS" AND "PRODUCT SAFETY NOTICE" IN THE SERVICE MANUAL.

PRODUCT SAFETY NOTE :

SHADED COMPONENTS ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET AND SHOULD BE REPLACED ONLY WITH TYPES IDENTICAL TO THOSE IN THE ORIGINAL OR SPECIFIED ONE IN THE PARTS LIST.
DON'T DEGRADE THE SAFETY OF THE SET THROUGH IMPROPER SERVICING.

RESISTOR

| | |
|--------------|------------|
| CARBON FILM | —/—/— |
| M-OXIDE FILM | —/—/— (M) |
| CARBON COMP | —/—/— (CC) |
| FUSIBLE | —/—/— (F) |
| CEMENT | —/—/— (C) |

CAPACITOR

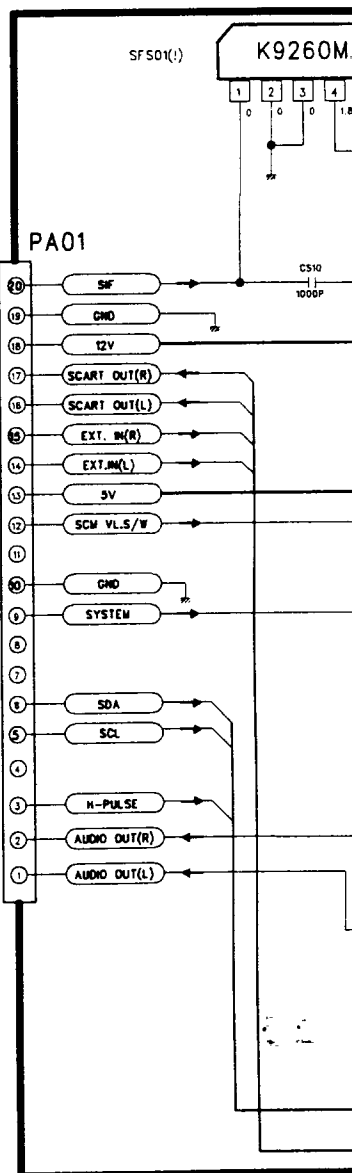
| | |
|------------------|------------|
| ELECTRO | —/—/— |
| CERAMIC | —/—/— |
| CERAMIC CH | —/—/— (CH) |
| TANTAL | —/—/— (T) |
| ELECTRO NONPOLAR | —/—/— (NP) |
| MYLAR | —/—/— (M) |

COIL

| | |
|---------|-----------|
| PEAKING | —/—/— |
| CHOKE | —/—/— (C) |
| BEAD | —/—/— (B) |

DIFFERENT PART FOR SYSTEM

| NO. | LDC. | P/S-B/G (FTZ) [TF] | P-B/G [TS] | P. |
|-----|-------|-------------------------|-----------------|----|
| 1 | VT101 | TEKE4-073A | ← | |
| 2 | SF101 | 63962M | ← | |
| 3 | SFS01 | G9251M | G9251M (NICAM) | |
| 4 | SFS02 | | | |
| 5 | I503 | | | |
| 6 | I501 | TDA-8362B | TDA-8362B | |
| 7 | P801A | CW-4232 | KKP-419C | |
| 8 | I504 | | | |
| 9 | X502 | | | |
| 10 | R456 | 1W 47K | 1W 47K | |
| 11 | JW01 | | | WI |
| 12 | VC101 | | | |
| 13 | J233 | | | |
| 14 | J234 | | | |
| 15 | J256 | JUMPER | | |
| 16 | J282 | | JUMPER | |
| 17 | D746 | | 1N4148 | |
| 18 | D748 | | | |
| 19 | D738 | | | |
| 20 | D743 | 1N4148 | ← | |
| 21 | D744 | 1N4148 | ← | |
| 22 | M722 | SPTH-C TD.3 | | |
| 23 | D750 | | | |
| 24 | D741 | | | |
| 25 | C105 | 10uF | 10uF | |
| 26 | 4000 | 2C | NICAM+2C | |
| 27 | C106 | 10uF | 10uF | |



DIFFERENT PART FOR SYSTEM (!)

OHM" IS OMITTED.
00 OHMS)

T UNLESS

NO ABOVE ARE IN OF
SEPT AS INDICATED.

EXCEPT AS INDICATED.

EPT AS INDICATED.

IC3198Y ALL PNP TRANSISTOR
DICATED.

3M MEASUREMENT CONDITIONS.

H POINT ARE MEASURED
UR BAR SIGNAL INPUT
ONTRLS SET TO THE

AND AC WAVEFORMS

TAGE : AC 230V 50Hz)

RAM IS A STANDARD ONE
ONSTANTS MAY BE SUBJECT TO
THOUT ANY NOTICE.

IS IT IS IMPORTANT THAT
AND FOLLOW THE
"SAFETY PRECAUTIONS"
IN THE SERVICE MANUAL.

| NO. | LOC. | P/S-B/G (FTZ) [TF] | P-B/G [TS] | P/S-B/G D/K N-3/4 (AV) [TK] | P/S-B/G D/K S-L/L' [VA] | P-I [TU] | REMARK |
|-----|-------|-------------------------|-----------------|-------------------------------------|---------------------------------|---------------|---------------|
| 1 | VT101 | TEKE4-073A | ← | VTSS7S23 | TEKE4-073A | DET78Z | |
| 2 | SF101 | G3962M | ← | ← | ← | J3950M | |
| 3 | SFS01 | 69251M | G9251M (NICAM) | K9260M | K9260M | J9250M | |
| 4 | SFS02 | | | | L9461M | | |
| 5 | I503 | | | TDA-8395 | TDA-8395 | | |
| 6 | I501 | TDA-8362B | TDA-8362B | TDA-8362B | TDA-8362 | TDA-8362B | |
| 7 | PB01A | CW-4232 | KKP-419C | KKP-419C | KKP-419C | CW-3201 | |
| 8 | I504 | | | LA-7950 | | | N-3/4 (AV) |
| 9 | X502 | | | 3.58MHz | | | N-3/4 (AV) |
| 10 | R456 | 1M 47K | 1M 47K | | 1M 47K | 1M 47K | N-4.43 (AV) |
| 11 | JW01 | | | WIRE JUMPER | | | N-3/4 (AV) |
| 12 | VC101 | | | | T203R300B | | S-L/L' |
| 13 | J233 | | | | JUMPER | | S-L/L' |
| 14 | J234 | | | | JUMPER | | S-L/L' |
| 15 | J256 | JUMPER | | JUMPER | JUMPER | | 2C |
| 16 | J282 | | JUMPER | | | JUMPER | 2C+NICAM |
| 17 | D746 | | 1N4148 | | | 1N4148 | 2C+NICAM |
| 18 | D748 | | | | | 1N4148 | UHF |
| 19 | D738 | | | | 1N4148 | | S-L/L' |
| 20 | D743 | 1N4148 | ← | ← | ← | ← | 20+21=AV4 |
| 21 | D744 | 1N4148 | ← | ← | ← | ← | AV2 |
| 22 | M722 | SPTH-C TO.3 | | | | | SHIELD PLATE |
| 23 | D750 | | | 1N4148 | | | EAST |
| 24 | D741 | | | | | 1N4148 | CHARACTER |
| 25 | C105 | 10uF | 10uF | 10uF | 10uF | 100uF | |
| 26 | 4000 | 2C | NICAM+2C | 2C | 2C | NICAM+2C | STEREO MODULE |
| 27 | C106 | 10uF | 10uF | 10uF | 33uF | 10uF | |

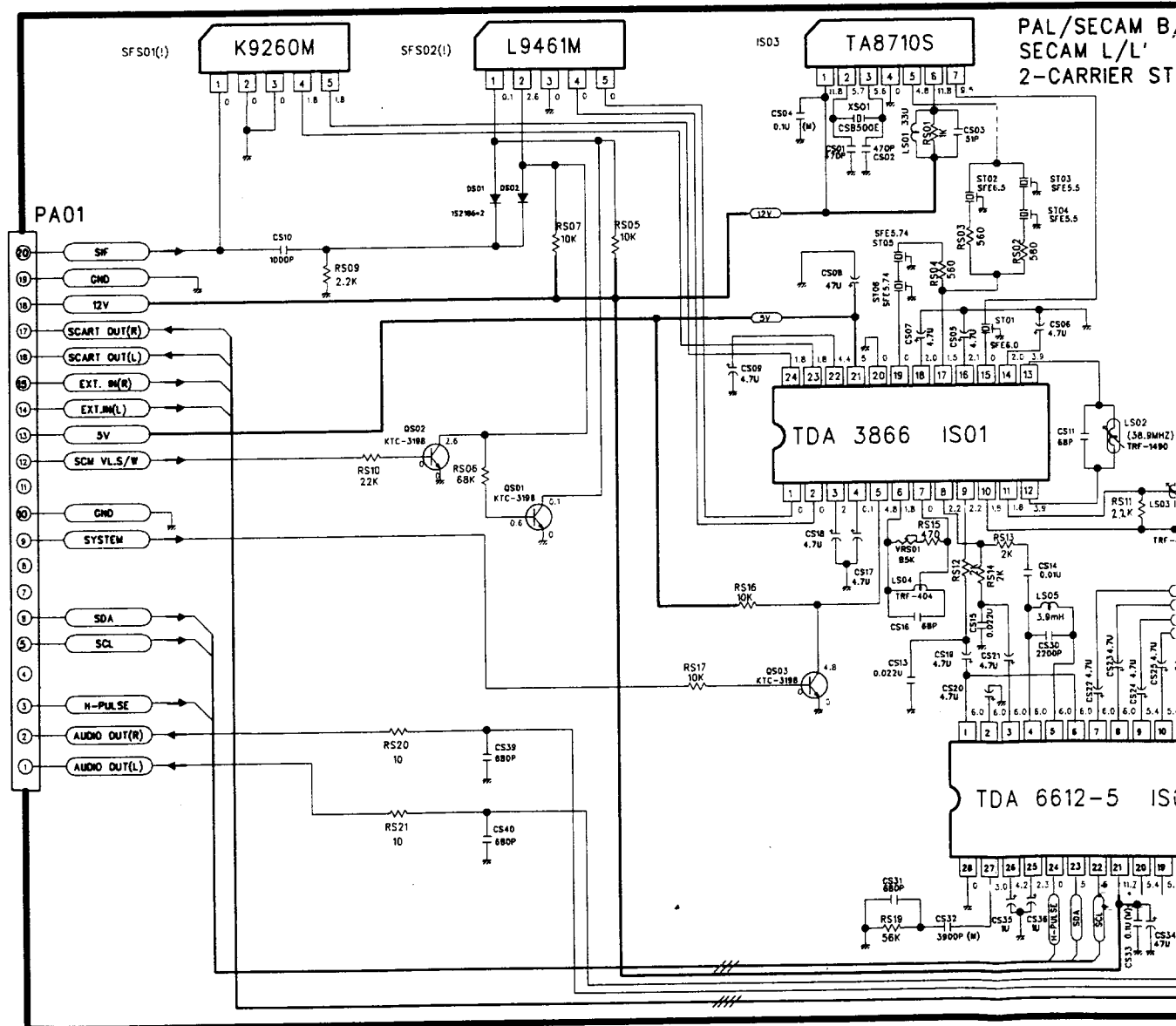
DIFFERENT PART FOR SIZE (!)

| NO. | LOC. | 20" | | | |
|-----|-------------|-------------------------|-------------------------|-------------------------|------------|
| | | ORION | SAMSUNG | POLKOLOR | |
| 1 | CRT | A48JLL90 | A48ECR11X16 | A48EEV33X01 | A5 |
| 2 | CRT SOCKET | ISM-01 | CTV3240-0501 | CTV3240-0501 | |
| 3 | D/COIL | DC-2050 | DC-2050 | DC-2050 | D |
| 4 | T402 | DCF-2217J | FSA17013M | FSA26012M | DC |
| 5 | L402 | L-102 | L-62 | L-76 | |
| 6 | R414 | 2W 6.8 (F) | 2W 2.7 (F) | 2W 2.7 (F) | 2W |
| 7 | GROUND ASSY | 48519A2010 | ← | ← | 485 |
| 8 | C407 | 1.6KV 6900 | 1.6KV 8200 | 1.6KV 7500 | 1.6 |
| 9 | C408 | 2KV 1000 | 2KV 470 | ← | |
| 10 | C409 | 2000V 0.47 | 200V 0.15 | 200V 0.39 | 2V |
| 11 | R801 | PTH451C202 B6180N270 | PTH451C202 B6180N270 | PTH451C202 B6180N270 | PTH B61 |

NOTE :

IMPORTANT FOR MAINTAINING
SHOULD BE REPLACED ONLY
HOSE IN THE ORIGINAL OR
S LIST.

OF THE SET THROUGH



DIFFERENT PART FOR SIZE (!)

| NO. | LOC. | 20" | | | 21" | | |
|-----|-------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| | | ORION | SAMSUNG | POLKOLOR | ORION | PHILIPS | SAMSUNG |
| 1 | CRT | A48JLL90 | A48ECR11X16 | A48EEV33X01 | A51JSM90X | A51EAL55X01 | A51EER11X40 |
| 2 | CRT SOCKET | ISM-01 | CTV3240-0501 | CTV3240-0501 | ISM-03 | CTV3240-0501 | CTV3240-0501 |
| 3 | D/COTL | DC-2050 | DC-2050 | DC-2050 | DC-2070 | DC-2070 | DC-2070 |
| 4 | T402 | DCF-2217J | FSA17013M | FSA26012M | DCF-2217L | FSA17013M | FSA17013M |
| 5 | L402 | L-102 | L-62 | L-76 | L-102 | L-76 | L-102 |
| 6 | R414 | 2W 6.8 (F) | 2W 2.7 (F) | 2W 2.7 (F) | 2W 6.8 (F) | 2W 6.8 (F) | 2W 6.8 (F) |
| 7 | GROUND ASSY | 48519A2010 | ← | ← | 4851900410 | ← | ← |
| 8 | C407 | 1.6KV 6900 | 1.6KV 8200 | 1.6KV 7500 | 1.6KV 8200 | 1.6KV 8200 | 1.6KV 8200 |
| 9 | C408 | 2KV 1000 | 2KV 470 | ← | ← | ← | ← |
| 10 | C409 | 2000V 0.47 | 200V 0.15 | 200V 0.39 | 200V 0.33 | 200V 0.47 | 200V 0.36 |
| 11 | R801 | PTH451C202 B6180N270 | PTH451C202 B6180N270 | PTH451C202 B6180N270 | PTH451C262 BF140M270 | PTH451C262 BF140M270 | PTH451C262 BF140M270 |

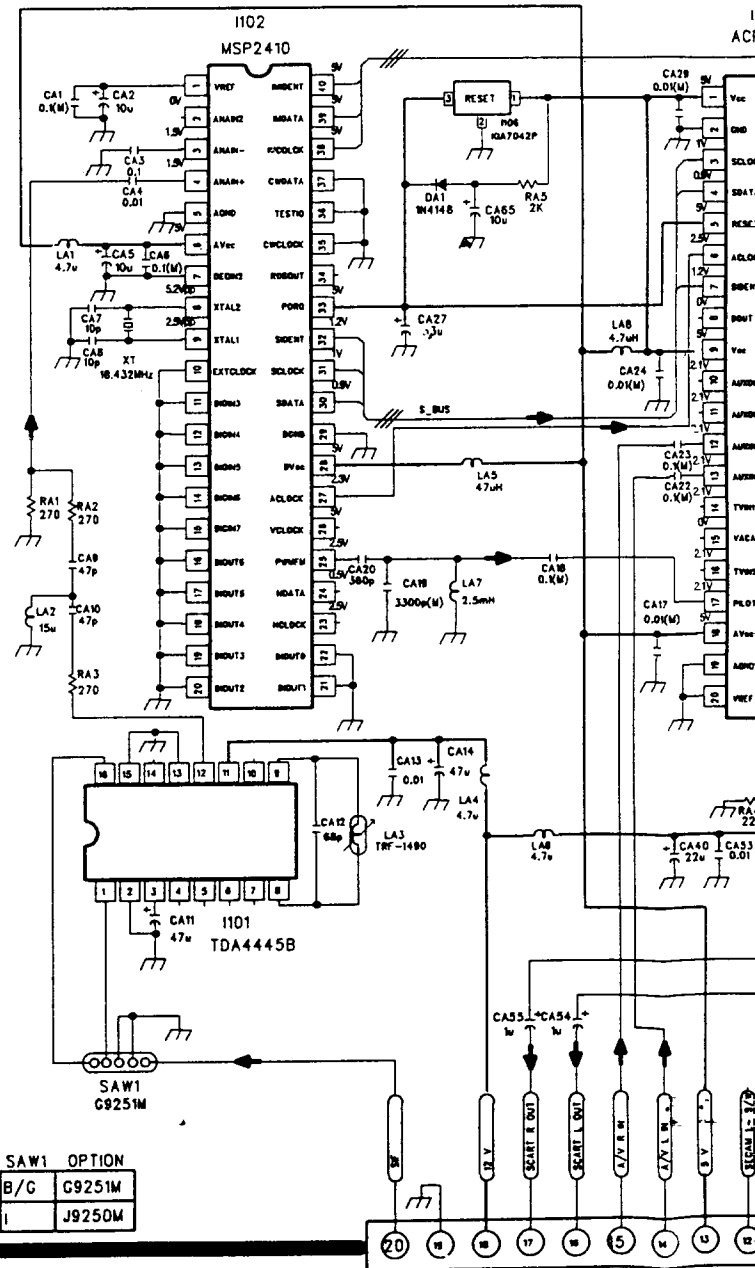
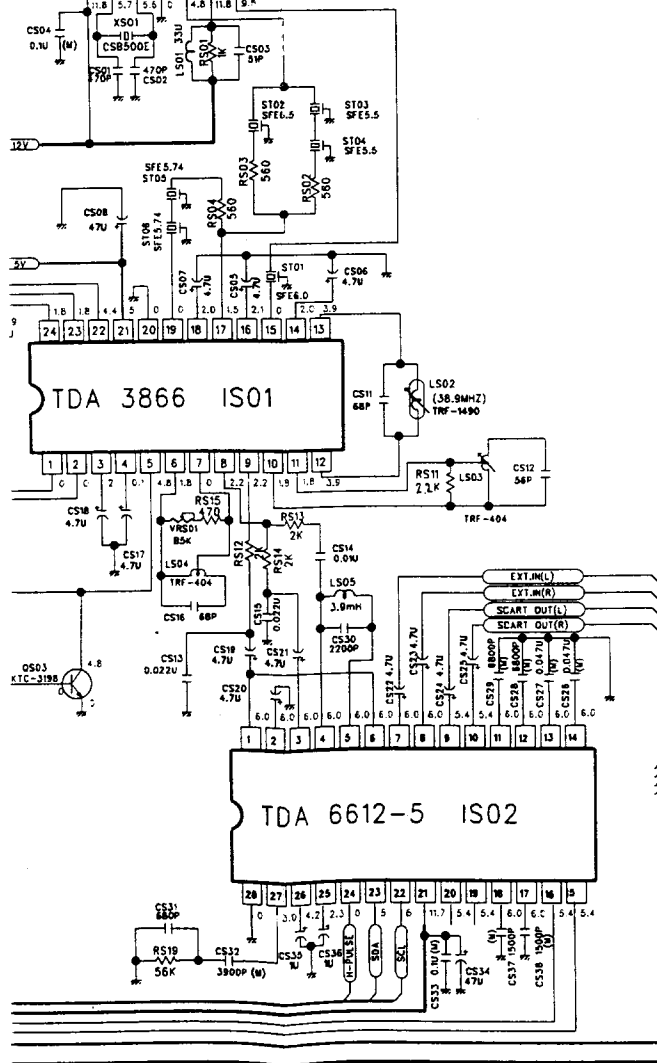
DIFFERENT PART FOR MODEL

| 1. | LOC. | CRT | | | |
|----|----------|------|-----------------|--------------|-----------------------------|
| | | TS | ORION CRT | TSF | PHILIPS CRT. SAMSUNG WF CRT |
| | | | | | |
| | | | | | |
| 2. | LOC. | INCH | HEAD PHONE JACK | CONTROL DOOR | INDEPENDENT CONTROL PCB |
| | DTT-2195 | 21" | YES | NO | YES |
| | DTT-21C1 | 21" | YES | NO | YES |
| | DTT-21B1 | 21" | YES | NO | YES |
| | DTT-2166 | 21" | NO | YES | NO |
| | DTT-20C1 | 20" | NO | NO | YES |
| | DTT-20B1 | 20" | NO | NO | YES |
| | DTT-2066 | 20" | NO | YES | NO |
| | DTT-2075 | 20" | NO | YES | NO |

DIODE OPT

| | | X/X |
|-------|-----|-----|
| D743/ | X/O | |
| D744 | O/X | |
| | O/O | |
| D746 | X | |
| | O | |
| D747/ | X/X | |
| D740 | X/O | |
| | O/X | |
| D739/ | X/X | |
| D750 | X/O | |
| | O/X | |
| D749/ | X/X | |
| D748 | O/X | |
| | X/O | |
| D741 | O | |
| | X | |
| D738X | X | |
| | O | |

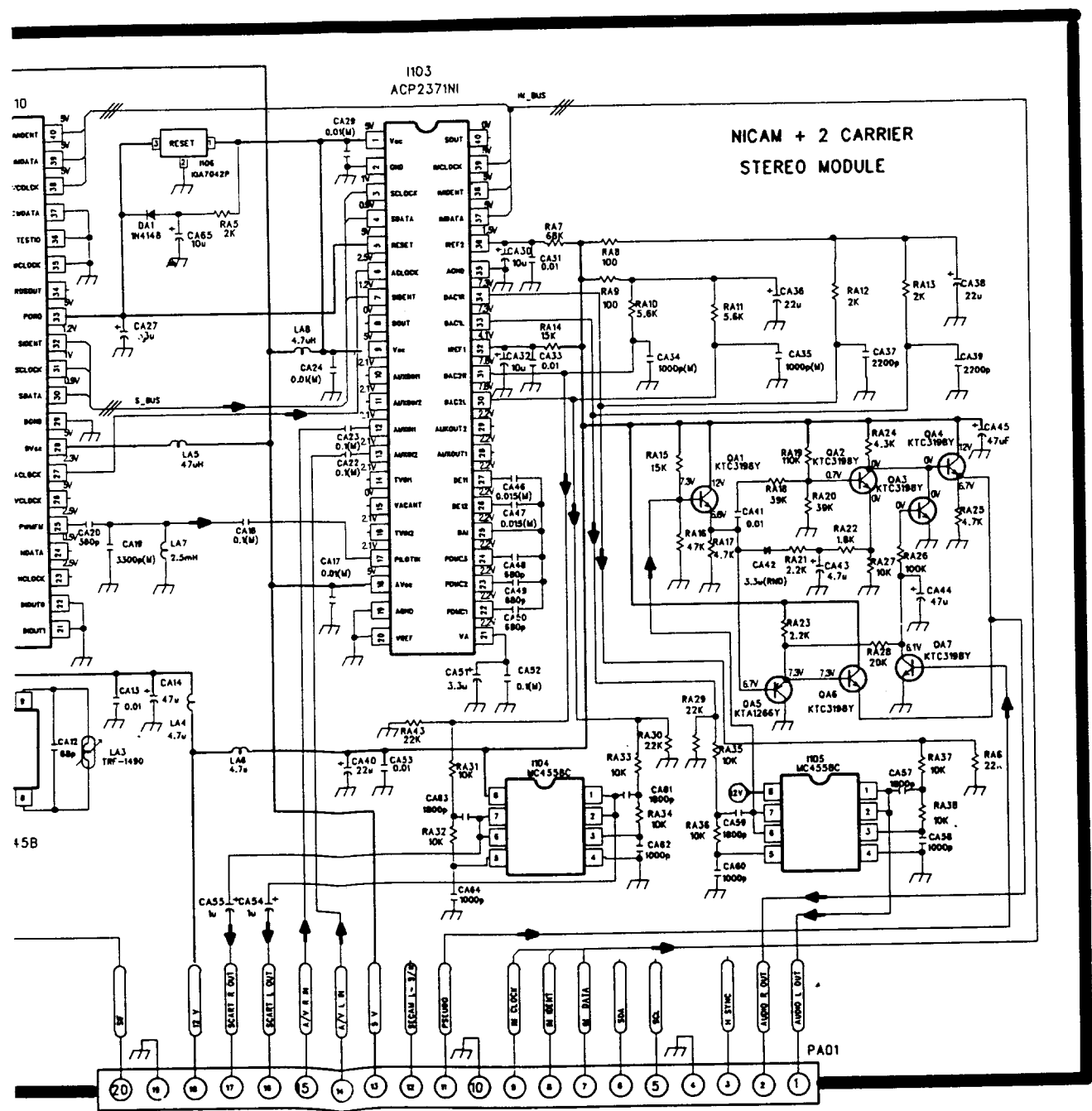
PAL/SECAM B/G, D/K SECAM L/L' 2-CARRIER STEREO MODULE

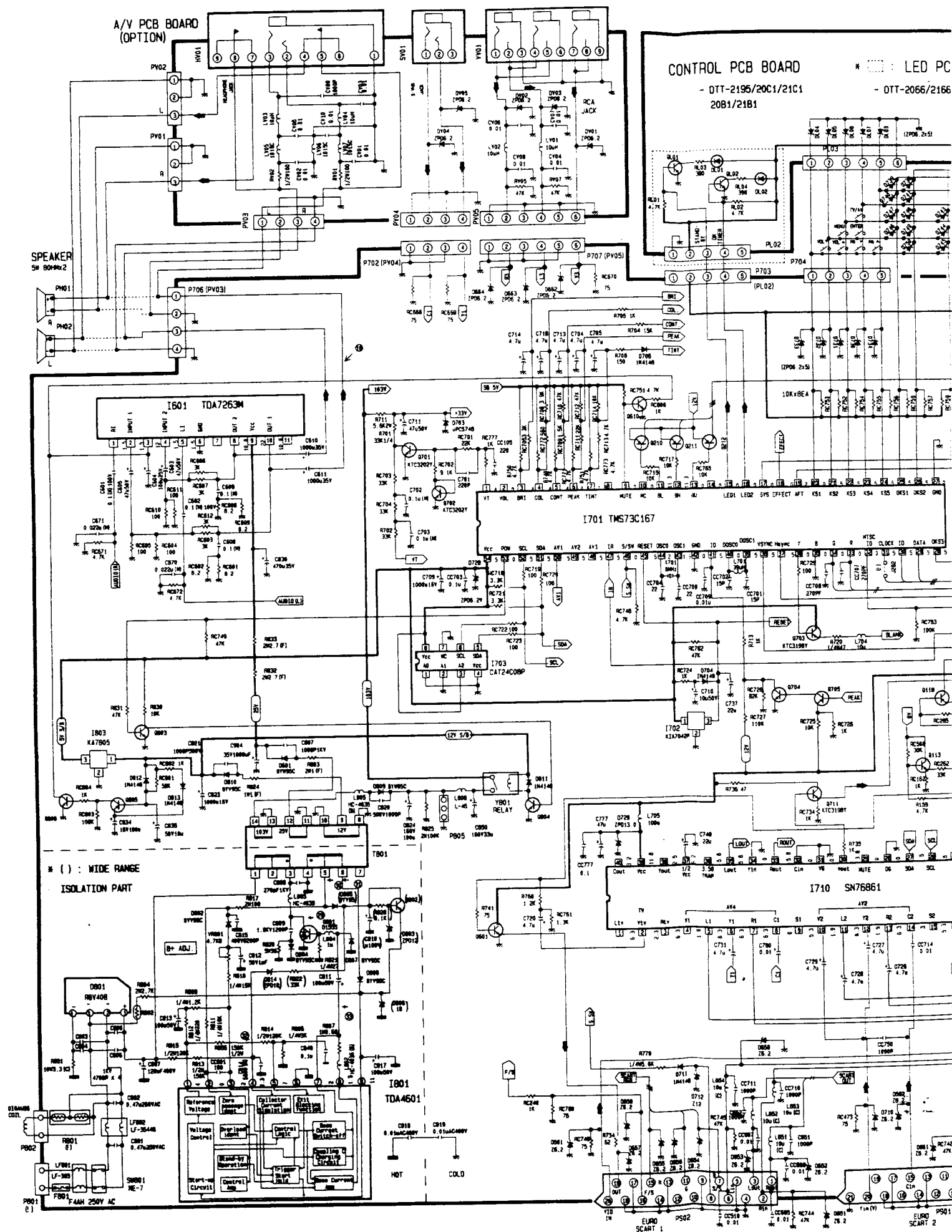


| SAW1 OPTION | |
|-------------|--------|
| B/G | G9251M |
| I | J9250M |

| | | |
|---------------------|--------------|-------------------------|
| CRT | | |
| RT | | |
| CRT, SAMSUNG WF CRT | | |
| 1 CRT | | |
| PHONE | CONTROL DOOR | INDEPENDENT CONTROL PCB |
| 3K | | |
| S | NO | YES |
| S | NO | YES |
| S | NO | YES |
| J | YES | NO |
| J | NO | YES |
| J | NO | YES |
| J | YES | NO |
| 0 | YES | NO |

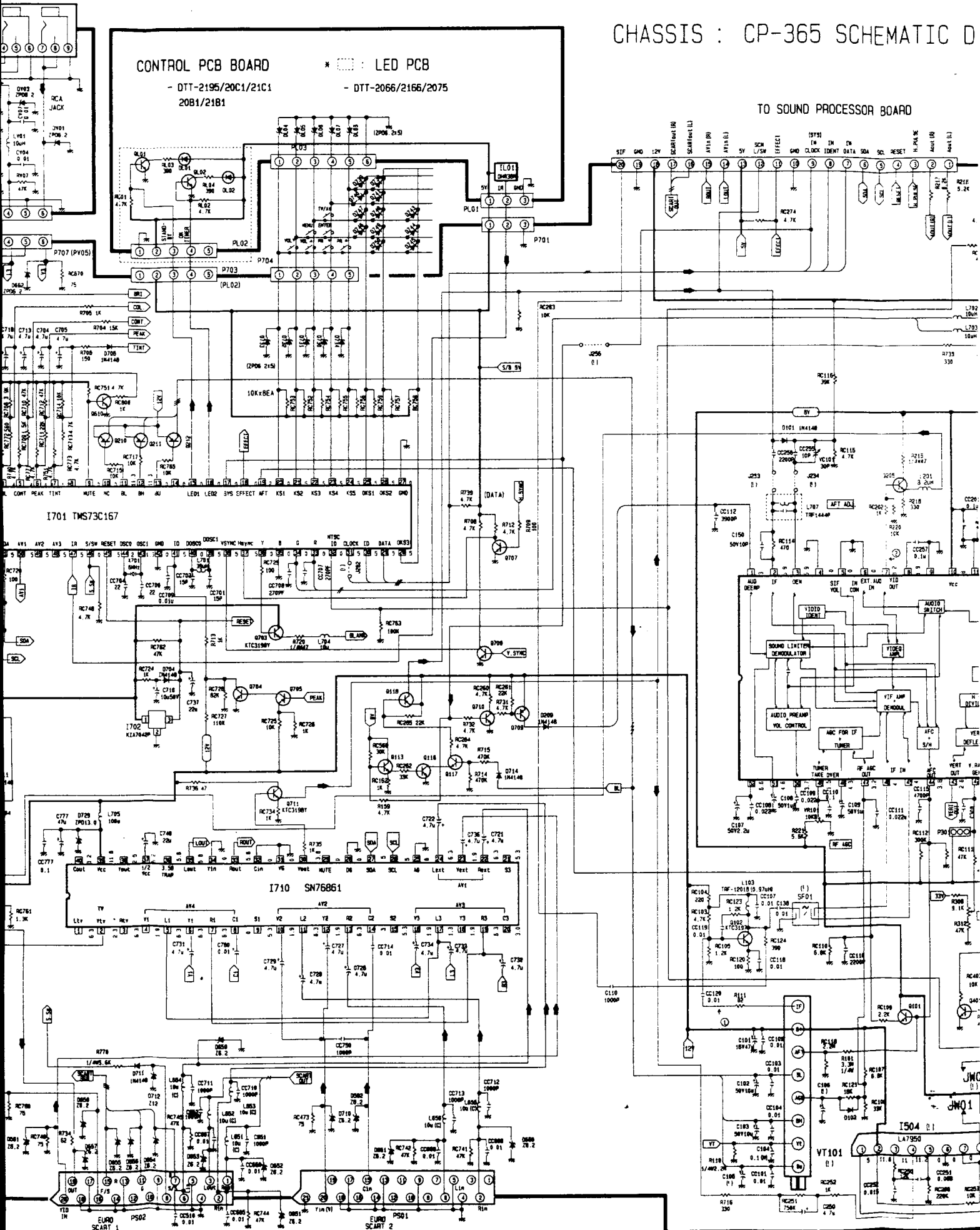
| | | |
|-------|-----|-------------------|
| | X/X | 3 AV SYSTEM |
| D743/ | X/D | 2 AV SYSTEM |
| D744 | D/X | 1 AV SYSTEM |
| | D/D | 4 AV SYSTEM |
| D746 | X | 2-CARRIER |
| | 0 | NICAM & 2-CARRIER |
| | X/X | FLOT/TOP (8 PAGE) |
| D747/ | X/O | NO TEXT |
| D740 | D/X | FLOF (4 PAGE) |
| | X/X | WEST TEXT |
| D739/ | X/O | EAST |
| D750 | D/X | TURKISH |
| | X/X | THREE BAND |
| D749/ | D/X | FOUR BAND |
| D748 | X/O | UHF ONLY |
| | 0 | OSD BY CHARACTER |
| D741 | X | OSD BY SYMBOL |
| | X | SINGLE SYSTEM |
| D738X | 0 | SECAM L/L |





CHASSIS : CP-365 SCHEMATIC D

TO SOUND PROCESSOR BOARD

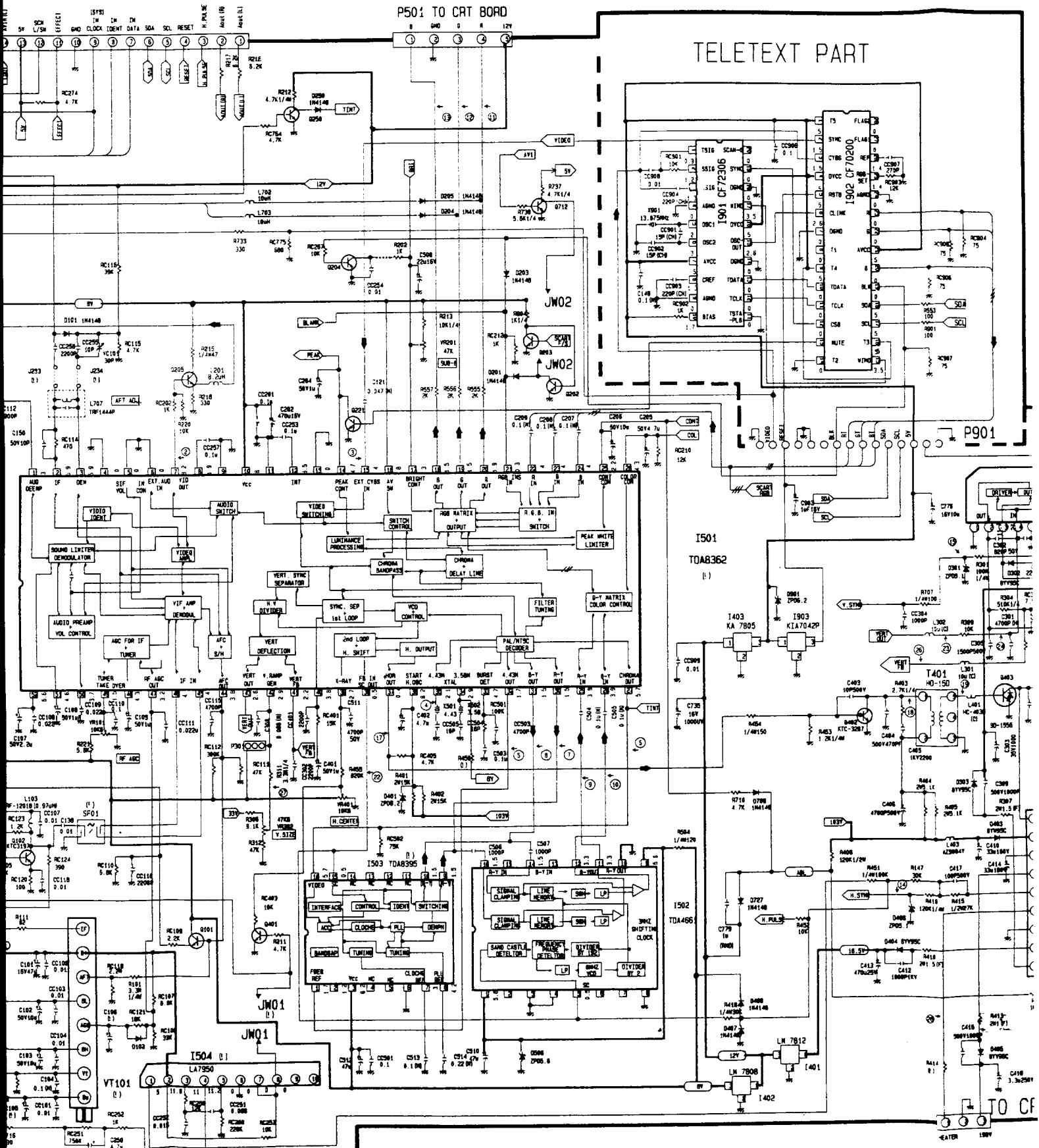


CP-365 SCHEMATIC DIAGRAM

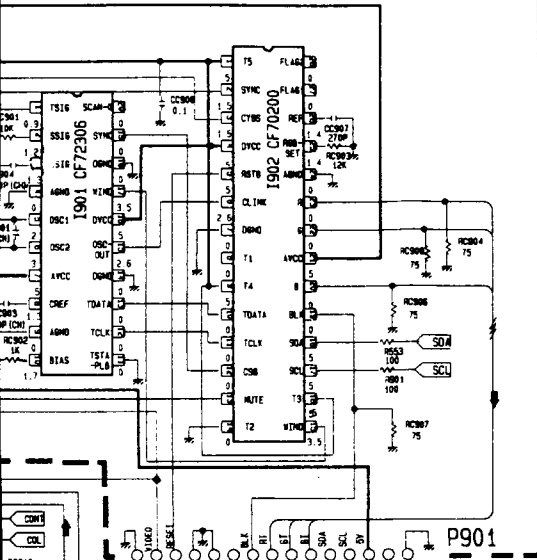
TO SOUND PROCESSOR BOARD

P501 TO CRT BORD

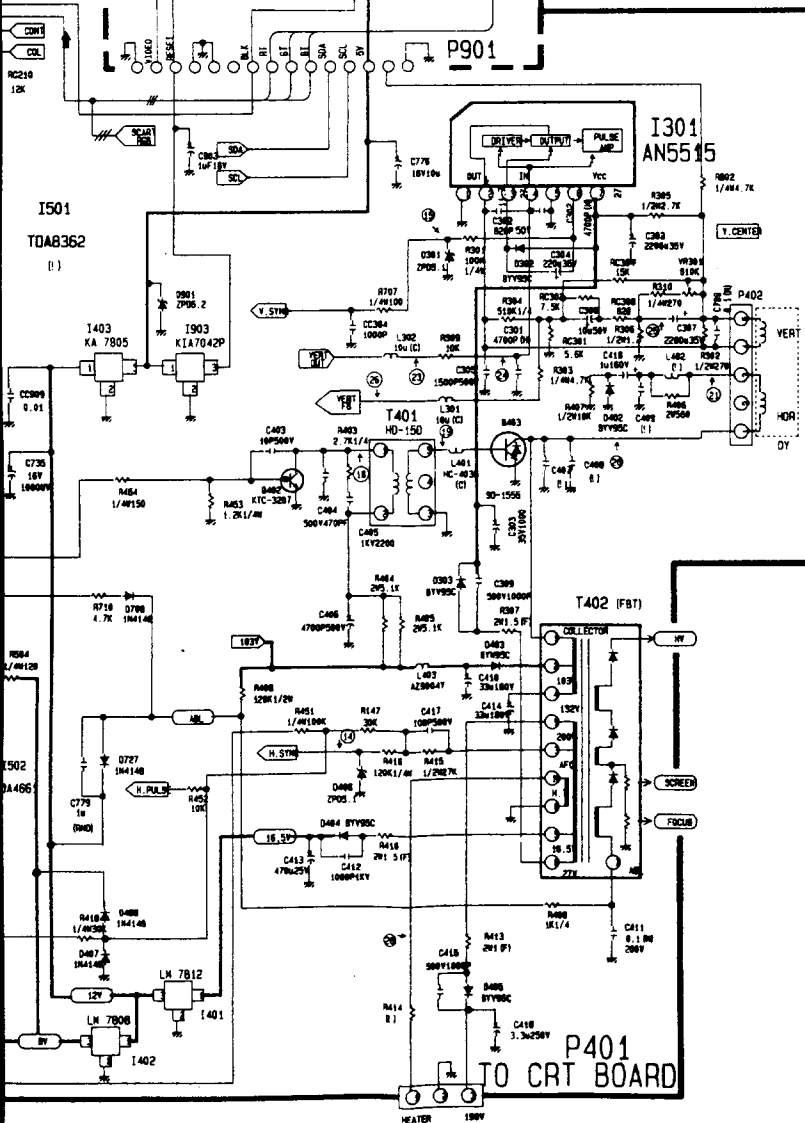
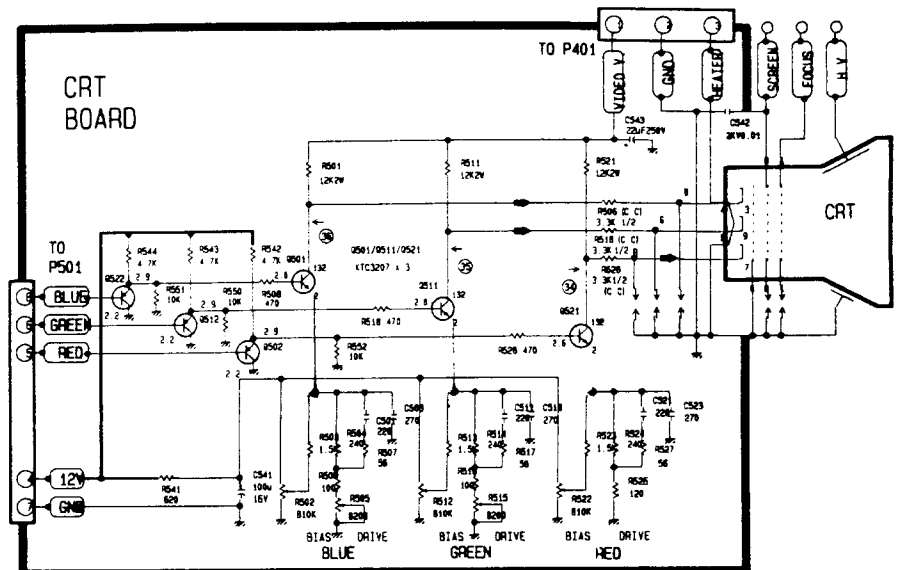
TELETEXT PART



TELETEXT PART



CRT BOARD



REMOTE CONTROL TRANSMITTER

